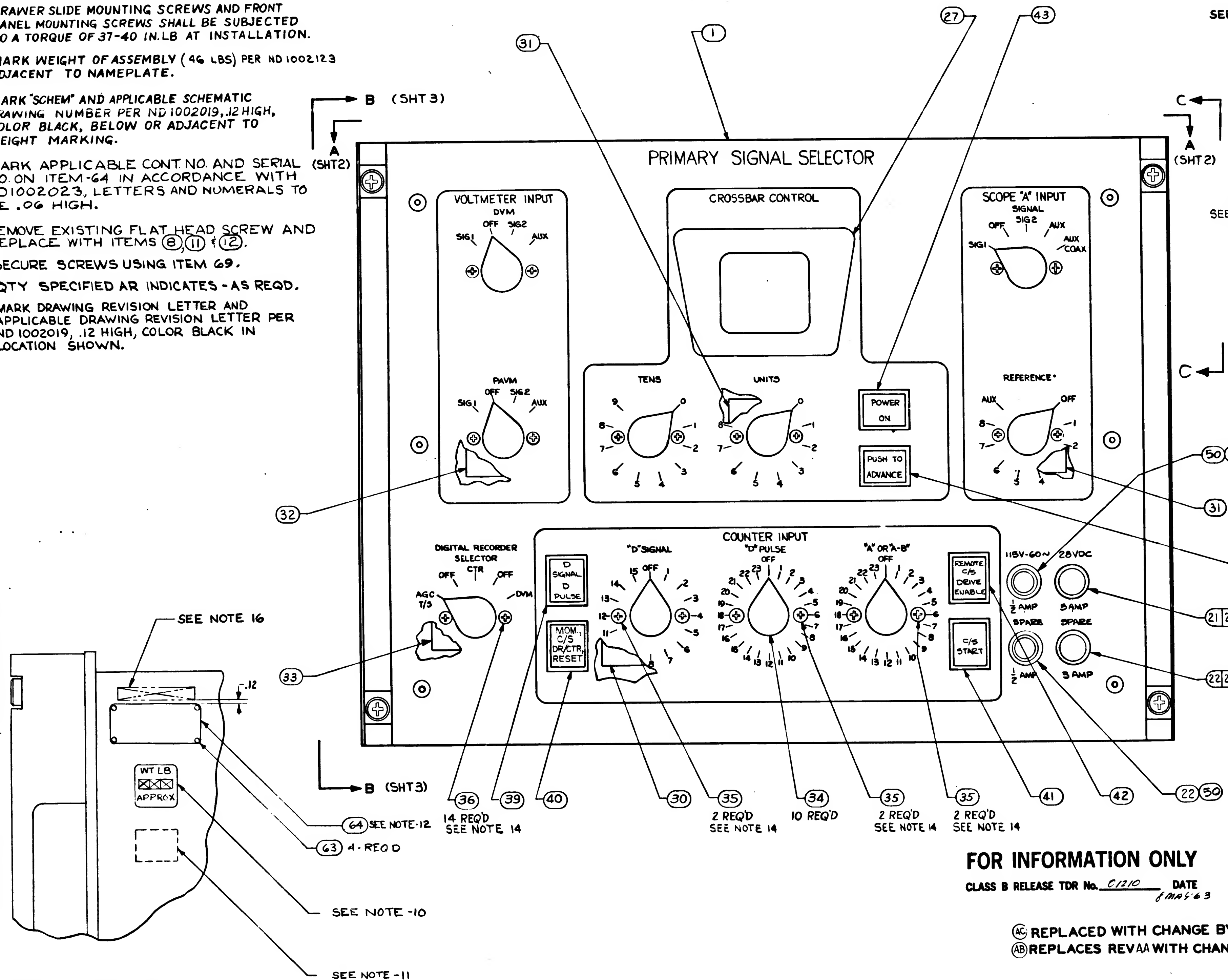
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
|---|---|---|---|---|---|
| AB |  | REPLACES REV AA WITH CHANGE PER CM 197137<br>REVISED PER TDR 10252 | — | 5 MAY 64<br>6-16-64 | JJJ CP |
| AC |  | REPLACED WITH CHANGE BY REV. AC PER CM 97967<br>REVISED PER TDRR 12884 | — | 17 AUG 64 | JJJ |

V2 64

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
3. DIMENSION A SHALL BE EQUAL TO DIMENSION B WITHIN .040 IN.
4. PARTIAL REF. DESIGNATIONS ARE SHOWN: PREFIX WITH UNIT NUMBER OR SUB-ASSEMBLY DESIGNATION (S) OR BOTH FOR COMPLETE DESIGNATION.
5. SOLDER PER MIL-STD-440 USING ITEMS 60 & 61.
6. VENDOR ITEM-SEE SPECIFICATION CONTROL DWG.
7. SELECT AS REQ'D
8. SHIM TO FIT. PEEL OFF EXCESS SHIM STOCK
9. DRAWER SLIDE MOUNTING SCREWS AND FRONT PANEL MOUNTING SCREWS SHALL BE SUBJECTED TO A TORQUE OF 37-40 IN.LB AT INSTALLATION.
10. MARK WEIGHT OF ASSEMBLY (46 LBS) PER ND 1002123 ADJACENT TO NAMEPLATE.
11. MARK "SCHEM" AND APPLICABLE SCHEMATIC DRAWING NUMBER PER ND 1002019, .12 HIGH, COLOR BLACK, BELOW OR ADJACENT TO WEIGHT MARKING.
12. MARK APPLICABLE CONT. NO. AND SERIAL NO. ON ITEM-64 IN ACCORDANCE WITH ND1002023, LETTERS AND NUMERALS TO BE .06 HIGH.
13. REMOVE EXISTING FLAT HEAD SCREW AND REPLACE WITH ITEMS ⑧, ⑪ & ⑫.
14. SECURE SCREWS USING ITEM 69.
15. QTY SPECIFIED AR INDICATES - AS REQD.
16. MARK DRAWING REVISION LETTER AND APPLICABLE DRAWING REVISION LETTER PER ND 1002019, .12 HIGH, COLOR BLACK IN LOCATION SHOWN.



PARTIAL VIEW C-C

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. C1210 DATE 6 MAY 63

Ⓐⓒ REPLACED WITH CHANGE BY REV AD

Ⓐⓑ REPLACES REV AA WITH CHANGE

|  | QUANTITY REQUIRED 011 | EFFECTIVITY | ITEM NO | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|
|  | X |  | 70 | PS1900057 | PROCUREMENT SPECIFICATION |
|  | AR |  | 69 | MIL-S-40038-C130 | SEALING COMPOUND (ES-2544-5) |
| SEE NOTE 7 | 2 |  | 67 | MS21919 DG 19 THRU 21 | CLAMP, CUSHIONED SUPPORT (1897073-119 THRU 121) |
|  | 2 |  | 66 | MS21919 DG 8 THRU 11 | CLAMP, CUSHIONED SUPPORT (1897073-108 THRU 111) |
|  | 1 |  | 65 | MS21919 DG 7 THRU 9 | CLAMP, CUSHIONED SUPPORT (1897073-107 THRU 109) |
|  | 1 |  | 64 | 1901304-114 | NAMEPLATE, APOLLO G & N |
|  | 4 |  | 63 | AN535 00-4 | SCREW, DRIVE, R.HD. (1897109-004) |
|  | 1 |  | 62 | 1900778 | WIRE LIST B B |
|  | AR |  | 61 | MIL-F-14256<br>QQ-S-571 | FLUX (ES-2798)<br>FLUX TYPE AR (ES-2175 TYPE 1 or 2 |
|  | AR |  | 60 | QQ-S-571 | SOLDER SN60 (ES-2175 ALLOY 1) |
| SEE NOTE 6 | 8 |  | 59 | 1016151-004 | NUT, SELF LOCKING |
|  | 8 |  | 58 | AN500AD4-7 | SCREW, (1897012-425) |
|  |  |  | 57 |  |  |
|  | 10 |  | 56 | MS-35216-26 | SCREW, PAN HEAD |
| SEE NOTE 6 | 1 |  | 55 | 1015825-014 | ROTARY SWITCH |
| SEE NOTE 6 & 8 | 10 |  | 54 | 1016005-1 | SHIM, SLIDE LOCATING |
| SEE NOTE 7 | 2 |  | 53 | MS21919 DG4 THRU 6. | CLAMP, CUSHIONED, SUPPORT (1897073-104 THRU 106) |
|  | 1 |  | 52 | 1900221-031 | SWITCH AND CONNECTOR ASS'Y. |
| SEE NOTE 6 | 1 |  | 51 | 1015873-1 | FUSE-HOLDER |
|  | 2 |  | 50 | MS90078-7-1 | FUSE (1897077-107) |
| SEE NOTE 6 | 1 |  | 49 | 1015791-010 | CHASSIS SLIDE ASSEMBLY |
|  | 1 |  | 48 | 1015791-009 | CHASSIS SLIDE ASSEMBLY |
|  | X |  | 47 | 1900498 | SCHEMATIC DIAGRAM |
|  |  |  | 46 |  |  |
|  |  |  | 45 |  |  |
|  | 1 |  | 44 | 1015869-336 | SWITCH, PUSH BUTTON |
|  | 1 |  | 43 | 1015869-512 |  |
|  | 1 |  | 42 | 1015869-806 |  |
|  | 1 |  | 41 | 1015869-345 |  |
|  | 1 |  | 40 | 1015869-726 |  |
|  | 1 |  | 39 | 1015869-805 | SWITCH, PUSH BUTTON |
|  | 1 |  | 38 | 1900096 | HARNESS "A" ASSEMBLY |
|  |  |  | 37 |  |  |
|  | 14 |  | 36 | MS35200-25 | SCREW, MACH, FLAT CSK XRECS |
|  | 6 |  | 35 | MS35200-40 | SCREW, MACH, FLAT CSK XRECS |
|  | 10 |  | 34 | MS91528-2K2B | KNOB (1897080-023) |
| SEE NOTE 6 | 2 |  | 33 | 1015825-8 | ROTARY SWITCH |
|  | 1 |  | 32 | 1015825-6 | ROTARY SWITCH |
|  | 3 |  | 31 | 1015825-4 | ROTARY SWITCH |
|  | 1 |  | 30 | 1900221-021 | SWITCH & CONNECTOR ASSY. |
|  | 1 |  | 29 | 1900221-011 | SWITCH & CONNECTOR ASSY. |
|  |  |  | 28 |  |  |
| SEE NOTE 6 | 1 |  | 27 | 1015943-1 | BEZEL-2 DIGIT |
|  | 2 |  | 26 | 1015912-193 | SCREW, NYLON-FLATHEAD |
|  | 1 |  | 25 | 1900220 | SPACER, DIGITAL READOUT |
| SEE NOTE 6 | 1 |  | 24 | 1015844-001 | DIGITAL READOUT |
|  | 2 |  | 23 | MS-90078-12-1 | FUSE (1897077-112) |
|  | 2 |  | 22 | MS-26572-1 | FUSE HOLDER-SPARE |
| SEE NOTE 6 | 1 |  | 21 | 1015873-008 | FUSE HOLDER |
|  |  |  | 20 |  |  |
|  | 18 |  | 19 | AN363-C632 | NUT, LOCK (1896990-261) |
|  | 1 |  | 18 | 1900779 | HARNESS "B" ASSEM |
|  |  |  | 17 |  |  |
|  |  |  | 16 |  |  |
| SEE NOTE 6 | 10 |  | 15 | 1015826-304 | SCREW, FLAT HD., HEX SOCKET |
|  | 1 |  | 14 | 1015981-005 | STANDOFF, HEX |
|  | 25 |  | 13 | MS-35216-24 | SCREW PAN HEAD |
|  | 29 |  | 12 | MS-35333-71 | WASHER, LOCK, INTERNAL TOOTH |
|  | 24 |  | 11 | AN960C-6 | WASHER, FLAT (1897006-026) |
| SEE NOTE 6 | 12 |  | 10 | 1016000-005 | HEX. SPACER |
|  | 1 |  | 9 | 1900224-011 | COMPONET MOUNT ASSEMBLY |
|  | 16 |  | 8 | MS-35216-25 | SCREW, PAN HEAD |
|  | 1 |  | 7 | 1900217 011 | TRANSFORMER & REL PNL ASSY. |
|  | 6 |  | 6 | AN363C1032 | NUT, SELF LOCKING (1896990-011) |
| SEE NOTE 6 | 6 |  | 5 | 1006783-45 | SCREW-BUTTON HEAD |
|  | 8 |  | 4 | 1015831-253 | SCREW-FH, 100°, HEX SOCKET |
|  | 2 |  | 3 | 1900015-081 | HANDLE ASSEMBLY |
|  | 1 |  | 2 | 1900210 | DRAWER INSEP. ASSEMBLY |
|  | 1 |  | 1 | 1900209 | FRONT PANEL |

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900004 | 1900004 | 011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE WISCONSIN
ACSP PN
DRAWN A. DelCuzzo DATE 6 JUNE 63
CHECKED 6 JUN63
APPROVAL 14 JUN63
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

PRIMARY SIGNAL SELECTOR
ASSEMBLY

CODE IDENT NO
SIZE E
1900057
SCALE 1:1
SHEET 1 OF 3

| AB | AB | AB |
|---|---|---|
| SHEET 1 | SHEET 2 | SHEET 3 |

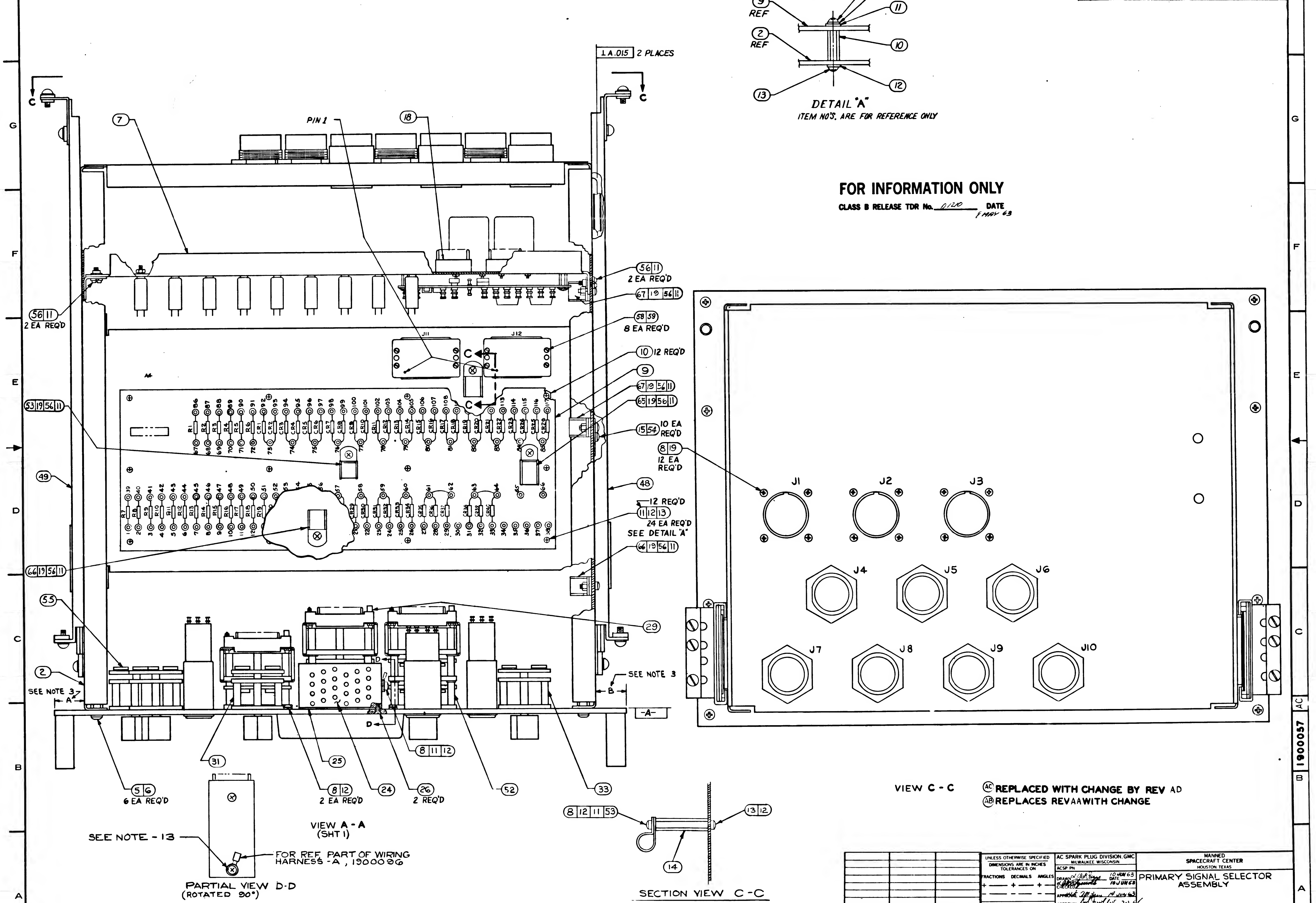
REVISION STATUS OF SHEETS

AC 1900057

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD |
|---|---|---|---|---|---|
| AB |  | REPLACES REV. AA WITH CHANGE PER CM 197 3 <br> REVISED PER TDR 10252 | — <br> — | 15 MAY 64 <br> 6-6-2 | J J J <br> JR |
| AC |  | REPLACED WITH CHANGE BY REV. AD PER CM 197967 <br> REVISED PER TDRR 12884 | — | 17 AUG 64 | J J J |

**FOR INFORMATION ONLY**

**CLASS B RELEASE TDR No.** 01210 **DATE** 8 MAY 63



ⒶⒸ REPLACED WITH CHANGE BY REV AD

ⒶⒷ REPLACES REV AA WITH CHANGE

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| APPLICATION |  |  |

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL #
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION. GMC
MILWAUKEE WISCONSIN
ACSP PN
DRAWN 10 JUN 63
CHECKED DATE 10 JUN 63
APPROVAL 14 JUN 63
APPROVAL 7-3-64
NASA APPROVAL W. J. 5-4-64
MIT APPROVAL 4 Jun 64

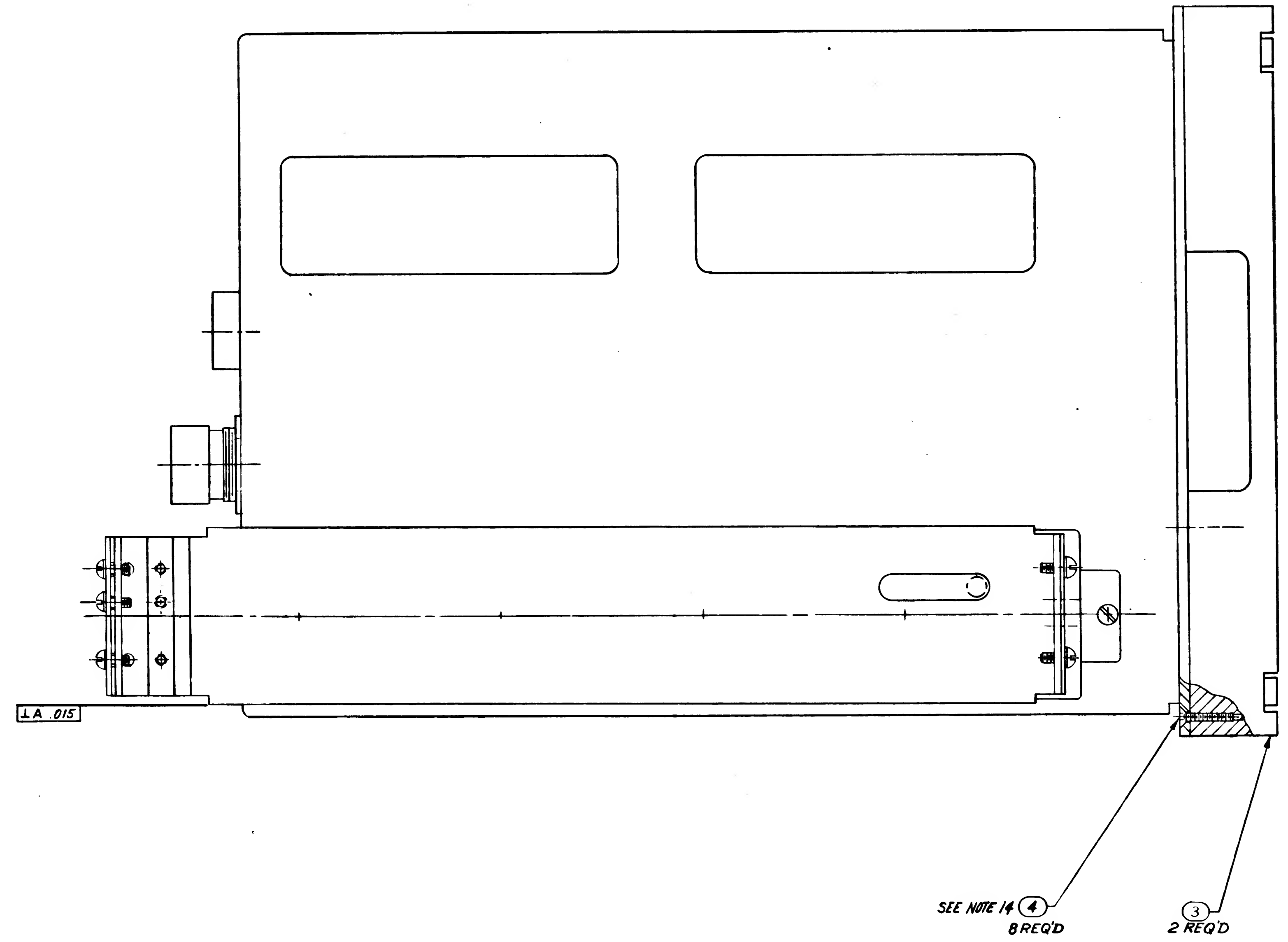
MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

PRIMARY SIGNAL SELECTOR
ASSEMBLY

CODE IDENT NO
SIZE E
1900057
SCALE 1:1
SHEET 2 OF 3

AC
1900057

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| AB | | REPLACES REV. AA WITH CHANGE PER CM 97 37<br>REVISED PER TDR 10252 | — | 15 MAY 64 | JJJ<br>CP<br>W/C |
| AC | | REPLACED WITH CHANGE BY REV. AD PER CM 197967<br>REVISED PER TDRR 12884 | — | 17 AUG 64 | JJJ |



VIEW B-B
SHEET 1

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01610 DATE 8 MAY 63

Ⓐⓒ REPLACED WITH CHANGE BY REV AD

Ⓐⓑ REPLACES REV AA WITH CHANGE

| | | |
|---|---|---|
| 1900004-011 | 1900004-011 | |
| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
| APPLICATION | | |

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± — ± — ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE WISCONSIN
ACSP PN
DRAWN 6 JUN 63
CHECKED 9 JUN 63
APPROVAL 14 JUN 63
APPROVAL 7/3/64
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

PRIMARY SIGNAL SELECTOR
ASSEMBLY

CODE IDENT NO
SIZE E
1900057
SCALE 1:1
SHEET 3 OF 3

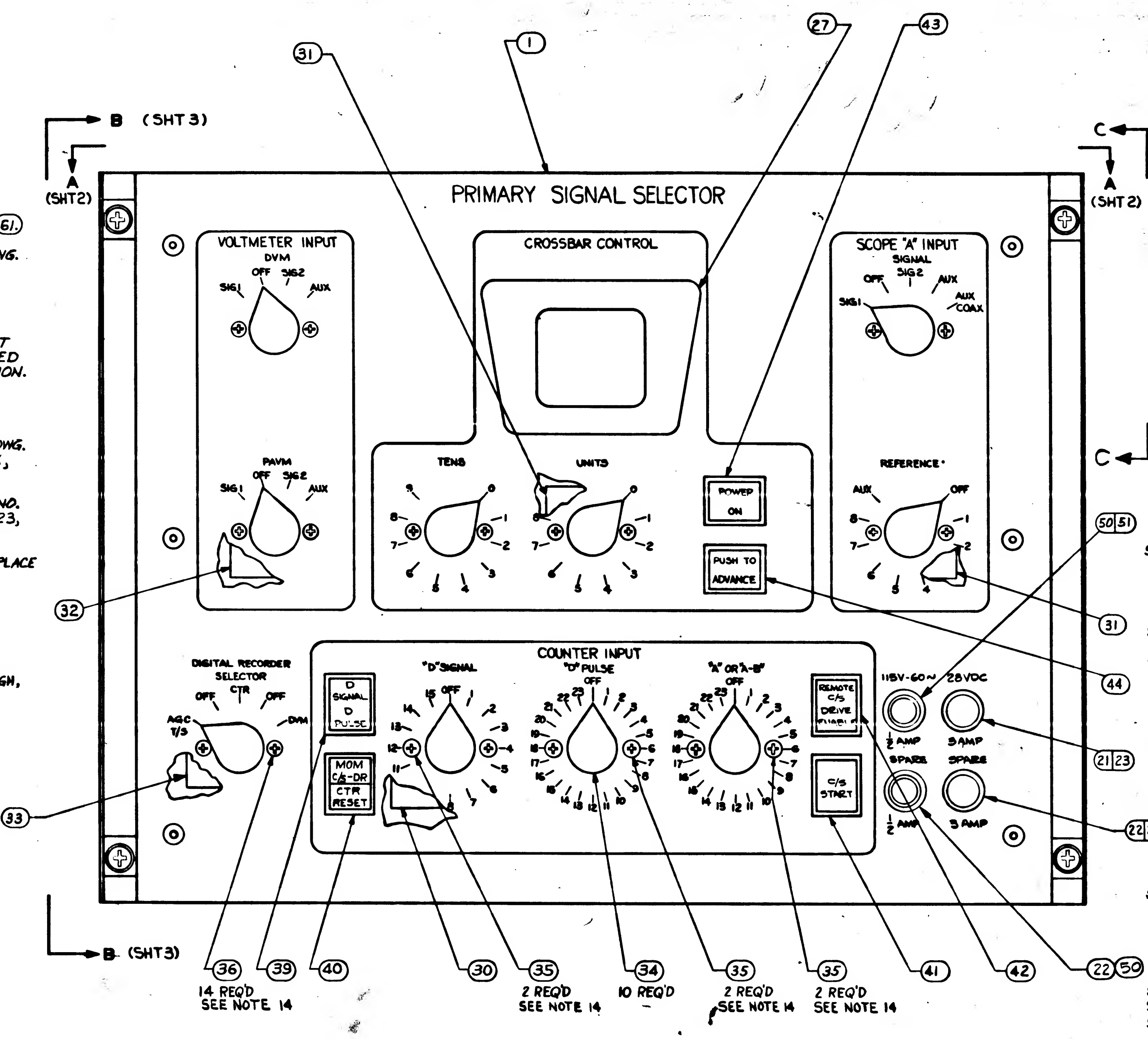
1900057 AC

1900057
SHT 3

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
|---|---|---|---|---|---|
| AD | | REPLACES REV AC WITH CHANGE PER CM197967<br>REVISED PER TDRR 12884 WK | | 19 JAN 64 | GG / PT |
| AE | | CHANGE IN ACCORDANCE WITH CM 199408 TDRR 12883 WK | — | 18 AUG 64 | JJJ / RAS |

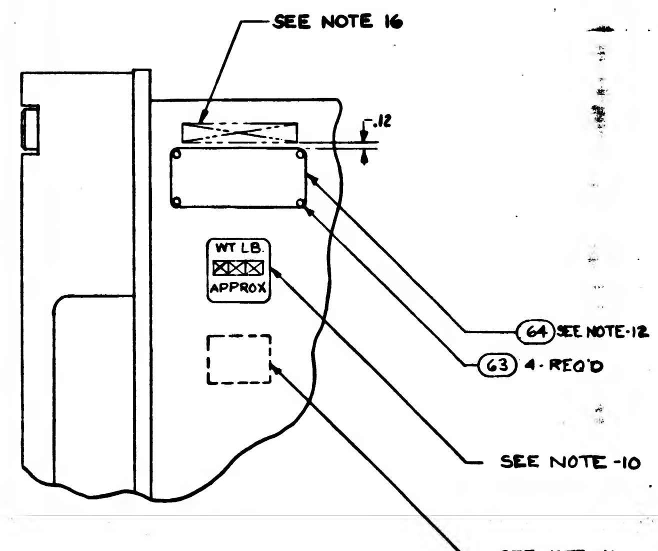
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2.
3. DIMENSION "A" SHALL BE EQUAL TO DIMENSION "B" WITHIN .040 INCHES.
4. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN: PREFIX WITH UNIT NUMBER OR SUB-ASSEMBLY DESIGNATION (S) OR BOTH FOR COMPLETE DESIGNATION.
5. SOLDER PER MIL-STD-440 USING ITEMS (60) & (61).
6. VENDOR ITEM - SEE SPECIFICATION CONTROL DWG.
7. SELECT AS REQUIRED.
8. SHIM TO FIT. PEEL OFF EXCESS SHIM STOCK.
9. DRAWER SLIDE MOUNTING SCREWS AND FRONT PANEL MOUNTING SCREWS SHALL BE SUBJECTED TO A TORQUE OF 37-40 IN. LB. AT INSTALLATION.
10. MARK WEIGHT OF ASSEMBLY (48-LBS) PER ND1002123 ADJACENT TO NAMEPLATE.
11. MARK "SCHEM" AND APPLICABLE SCHEMATIC DWG. NO. PER ND1002019, .12 HIGH, COLOR BLACK, BELOW OR ADJACENT TO WEIGHT MARKING.
12. MARK APPLICABLE CONT. NO. AND SERIAL NO. ON ITEM 64 IN ACCORDANCE WITH ND1002023, LETTERS AND NUMERALS TO BE .06 HIGH.
13. REMOVE EXISTING FLAT HEAD SCREW AND REPLACE WITH ITEMS (8), (11) & (12).
14. SECURE SCREWS USING ITEM (69).
15. QTY. SPECIFIED "AR" INDICATES -AS REQ'D.
16. MARK "DWG REV LTR ___" AND APPLICABLE DRAWING REVISION LETTER PER ND1002019, .12 HIGH, COLOR BLACK, IN LOCATION SHOWN.
17. CENTERLINE OF MOUNTING HOLES ON ITEM (84) IS OFF CENTER. ASSEMBLE AS SHOWN.



**FOR INFORMATION ONLY**
CLASS B RELEASE TDR No. 01210 DATE 8 MAY 63

(AD) REPLACES REV AC WITH CHANGE



PARTIAL VIEW C-C

| AE | AE | AD |
|---|---|---|
| AD | AD | AD |
| SHEET 1 | SHEET 2 | SHEET 3 |

REVISION STATUS OF SHEETS

MASTER

| | QUANTITY REQUIRED 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|
| | | | 86 | | |
| | | | 85 | | |
| | | | 84 | | |
| | | | 83 | | |
| | | | 82 | | |
| | | | 81 | | |
| | | | 80 | | |
| | | | 79 | | |
| | | | 78 | | |
| | | | 77 | | |
| | | | 76 | | |
| | | | 75 | | |
| | | | 74 | | |
| | | | 73 | | |
| | | | 72 | | |
| | | | 71 | | |
| | X | | 70 | PS1900057 | PROCUREMENT SPECIFICATION |
| | AR | | 69 | MIL-S-40038-C130 | SEALING COMPOUND (ES-2544-5) |
| | | | 68 | | |
| SEE NOTE 7 | 2 | | 67 | MS 21919<br>DG19 THRU 21 | CLAMP, CUSHIONED SUPPORT<br>(1897073-119 THRU 121) |
| SEE NOTE 7 | 2 | | 66 | MS 21919<br>DG8 THRU 11 | CLAMP, CUSHIONED SUPPORT<br>(1897073-108 THRU 111) |
| SEE NOTE 7 | 1 | | 65 | MS 21919<br>DG7 THRU 9 | CLAMP, CUSHIONED SUPPORT<br>(1897073-107 THRU 109) |
| | 1 | | 64 | 1901304-114 | NAMEPLATE, APOLLO, GEN |
| | 4 | | 63 | AN535-00-4 | (1897109-004) SCREW DRIVE, RD. HD |
| | 1 | | 62 | 1900778 | WIRE LIST BB |
| | AR | | 61 | MIL-F-14256<br>QQ-S-571 | FLUX (ES-2798)<br>FLUX TYPE AR (ES-2175 TYPE 1 OR 2) |
| | AR | | 60 | QQ-S-571 | SOLDER SN60 (ES-2175 ALLOY I) |
| SEE NOTE 6 | 8 | | 59 | 1016151-004 | NUT, SELF LOCKING |
| | 8 | | 58 | AN500AD4-7 | (1897012-425) SCREW |
| | | | 57 | | |
| | 10 | | 56 | MS-35216-26 | SCREW, PAN HEAD |
| SEE NOTE 6 | 1 | | 55 | 1015825-014 | ROTARY SWITCH |
| SEE NOTE 6&8 | 10 | | 54 | 1016005-1 | SHIM, SLIDE LOCATING |
| SEE NOTE 7 | 2 | | 53 | MS 21919<br>DG4 THRU 6 | CLAMP, CUSHIONED, SUPPORT<br>(1897073-104 THRU 106 |
| | 1 | | 52 | 1900221-031 | SWITCH & CONNECTOR ASSY. |
| SEE NOTE 6 | 1 | | 51 | 1015873-1 | FUSE HOLDER |
| | 2 | | 50 | MS90078-7-1 | (1897077-107) FUSE |
| SEE NOTE 6 | 1 | | 49 | 1015791-010 | CHASSIS SLIDE ASSY. |
| SEE NOTE 6 | 1 | | 48 | 1015791-009 | CHASSIS SLIDE ASSY. |
| | X | | 47 | 1900498 | SCHEMATIC DIAGRAM |
| | | | 46 | | |
| | | | 45 | | |
| | 1 | | 44 | 1015869-336 | SWITCH, PUSH BUTTON |
| | 1 | | 43 | 1015869-512 | |
| | 1 | | 42 | 1015869-806 | |
| | 1 | | 41 | 1015869-345 | |
| | 1 | | 40 | 1015869-726 | |
| SEE NOTE 6 | 1 | | 39 | 1015869-805 | SWITCH, PUSH BUTTON |
| | 1 | | 38 | 1900096 | HARNESS "A" ASSY. |
| | | | 37 | | |
| | 14 | | 36 | MS35200-25 | SCREW, MACH., FLAT CSK X RECS. |
| | 6 | | 35 | MS35200-40 | SCREW, MACH., FLAT CSK X RECS. |
| | 10 | | 34 | MS91528-2K2B | (1897080-023) KNOB |
| SEE NOTE 6 | 2 | | 33 | 1015825-8 | ROTARY SWITCH |
| SEE NOTE 6 | 1 | | 32 | 1015825-6 | ROTARY SWITCH |
| SEE NOTE 6 | 3 | | 31 | 1015825-4 | ROTARY SWITCH |
| | 1 | | 30 | 1900221-021 | SWITCH & CONNECTOR ASSY. |
| | 1 | | 29 | 1900221-011 | SWITCH & CONNECTOR ASSY. |
| | | | 28 | | |
| SEE NOTE 6 | 1 | | 27 | 1015943-1 | BEZEL - 2 DIGIT |
| SEE NOTE 6 | 2 | | 26 | 1015912-193 | SCREW, NYLON-FLAT HEAD |
| | 1 | | 25 | 1900220 | SPACER, DIGITAL READOUT |
| SEE NOTE 6 | 1 | | 24 | 1015844-001 | DIGITAL READOUT |
| | 2 | | 23 | MS-90078-12-1 | (1897077-112) FUSE |
| | 2 | | 22 | MS-26572-1 | FUSE HOLDER - SPARE |
| SEE NOTE 6 | 1 | | 21 | 1015873-008 | FUSE HOLDER |
| | | | 20 | | |
| | 18 | | 19 | AN363C632 | (1896990-261) NUT, LOCK |
| | 1 | | 18 | 1900779 | HARNESS "B" ASSY. |
| | | | 17 | | |
| | | | 16 | | |
| SEE NOTE 6 | 10 | | 15 | 1015826-304 | SCREW, FLAT HEAD, HEX. SOCKET |
| SEE NOTE 6 | 1 | | 14 | 1015981-005 | STANDOFF, HEX. |
| | 1 | | 13 | MS35216-24 | SCREW, PAN HD |
| | 29 | | 12 | MS35333-71 | WASHER, LOCK, INTERNAL TOOTH |
| | 12 | | 11 | AN960C-6 | (1897006-026) WASHER, FLAT |
| | 12 | | 10 | 1016000-005 | STANDOFF-THREADED HEXAGON |
| | 1 | | 9 | 1900224 | COMPONENT MOUNT ASSY. |
| | 16 | | 8 | MS-35216-25 | SCREW, PAN HEAD |
| | 1 | | 7 | 1900217 | [illegible] ASSY. |
| | 6 | | 6 | AN363C1032 | (1896990-011) NUT, SELF-LOCKING |
| SEE NOTE 6 | 6 | | 5 | 1006783-45 | SCREW-BUTTON HEAD |
| SEE NOTE 6 | 8 | | 4 | 1015831-253 | SCREW-FL. HD. 100° HEX. SOCKET |
| | 2 | | 3 | 1900015-081 | HANDLE ASSY. |
| | 1 | | 2 | 1900210 | DRAWER INSEP. ASSY. |
| | 1 | | 1 | 1900209 | FRONT PANEL |

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900004-011 | 1900004-011 | -011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN CUZZO 6 JUN 63
CHECKED SQUIRES 8 JUN 63
APPROVAL J M BROWN 14 JUN 63
APPROVAL 2 Sep 64
NASA APPROVAL
MIT APPROVAL 23 Sep 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

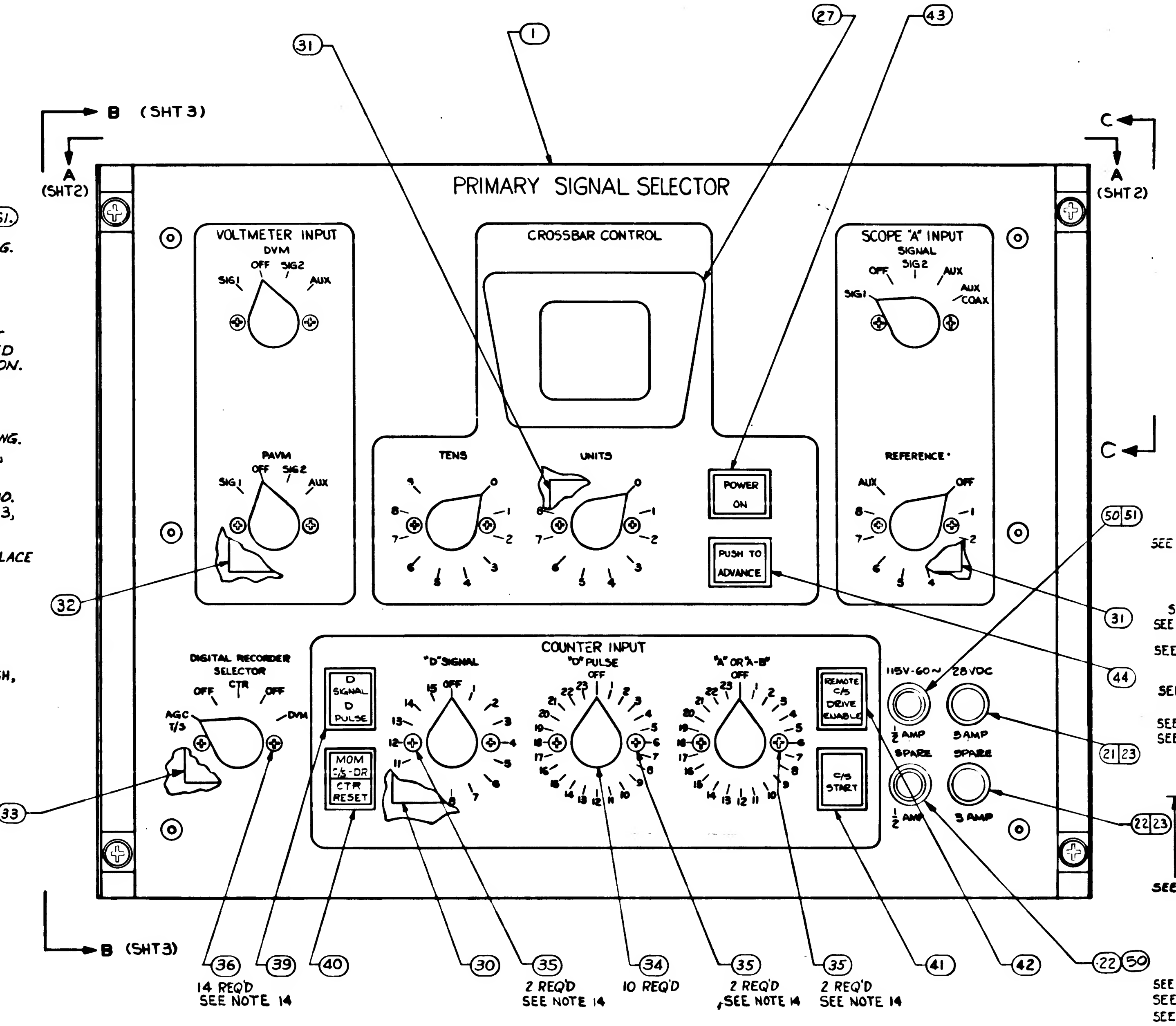
PRIMARY SIGNAL SELECTOR ASSEMBLY

CODE IDENT NO.
SIZE E
1900057
SCALE FULL
SHEET 1 OF 3

1900057 AE

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2.
3. DIMENSION "A" SHALL BE EQUAL TO DIMENSION "B" WITHIN .040 INCHES.
4. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN: PREFIX WITH UNIT NUMBER OR SUB-ASSEMBLY DESIGNATION (S) OR BOTH FOR COMPLETE DESIGNATION.
5. SOLDER PER MIL-STD-440 USING ITEMS (60) & (61).
6. VENDOR ITEM - SEE SPECIFICATION CONTROL DWG.
7. SELECT AS REQUIRED.
8. SHIM TO FIT. PEEL OFF EXCESS SHIM STOCK.
9. DRAWER SLIDE MOUNTING SCREWS AND FRONT PANEL MOUNTING SCREWS SHALL BE SUBJECTED TO A TORQUE OF 37-40 IN. LB. AT INSTALLATION.
10. MARK WEIGHT OF ASSEMBLY (48-LBS) PER ND1002123 ADJACENT TO NAMEPLATE.
11. MARK "SCHEM" AND APPLICABLE SCHEMATIC DWG. NO. PER ND1002019, .12 HIGH, COLOR BLACK, BELOW OR ADJACENT TO WEIGHT MARKING.
12. MARK APPLICABLE CONT. NO. AND SERIAL NO. ON ITEM 64 IN ACCORDANCE WITH ND1002023, LETTERS AND NUMERALS TO BE .06 HIGH.
13. REMOVE EXISTING FLAT HEAD SCREW AND REPLACE WITH ITEMS (8), (11) & (12).
14. SECURE SCREWS USING ITEM (69).
15. QTY. SPECIFIED "AR" INDICATES -AS REQ'D.
16. MARK "DWG REV LTR ___" AND APPLICABLE DRAWING REVISION LETTER PER ND1002019, .12 HIGH, COLOR BLACK, IN LOCATION SHOWN.
17. CENTERLINE OF MOUNTING HOLES ON ITEM (84) IS OFF CENTER. ASSEMBLE AS SHOWN.

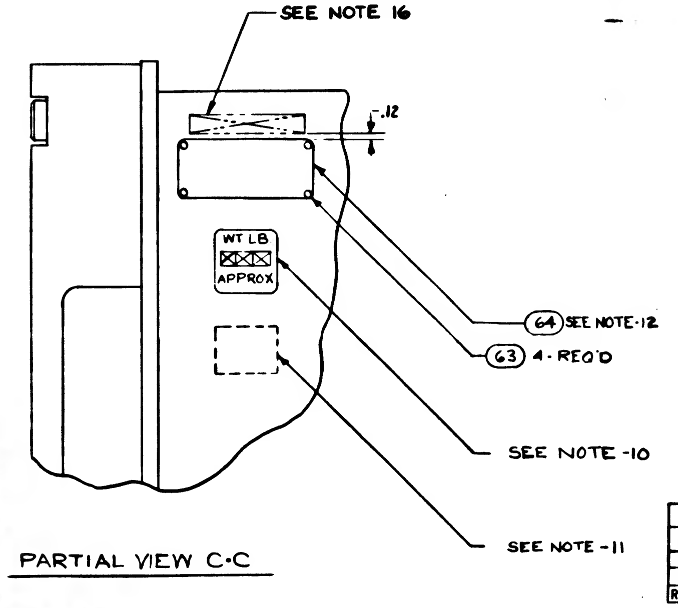


| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
|---|---|---|---|---|---|
| AD | | REPLACES REV AC WITH CHANGE PER CM197967<br>REVISED PER TDRR 12884 WK | | 19 JUN 64 | GG |
| AE | | CHANGE IN ACCORDANCE WITH CM 199408 TDRR 12893 WK | — | 12 AUG 64 | DAS |
| AF | | REVISED PER TDRR 12893 | | 30 SEP 64 | |

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01210 DATE 8MAY63

(AD) REPLACES REV AC WITH CHANGE



PARTIAL VIEW C-C

| AF | AE | AD |
|---|---|---|
| AE | AE | AD |
| AD | AD | AD |
| SHEET 1 | SHEET 2 | SHEET 3 |

REVISION STATUS OF SHEETS

| | | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|---|
| | | | | | | 86 | | |
| | | | | | | 85 | | |
| | | | | | | 84 | | |
| | | | | | | 83 | | |
| | | | | | | 82 | | |
| | | | | | | 81 | | |
| | | | | | | 80 | | |
| | | | | | | 79 | | |
| | | | | | | 78 | | |
| | | | | | | 77 | | |
| | | | | | | 76 | | |
| | | | | | | 75 | | |
| | | | | | | 74 | | |
| | | | | | | 73 | | |
| | | | | | | 72 | | |
| | | | | | | 71 | | |
| | | | | X | | 70 | PS1900057 | PROCUREMENT SPECIFICATION |
| | | | | AR | | 69 | MIL-S-40038-C130 | SEALING COMPOUND (ES-2544-5) |
| | | | | | | 68 | | |
| SEE NOTE 7 | | | | 2 | | 67 | MS 21919 DG19 THRU 21 | CLAMP, CUSHIONED SUPPORT (1897073-119 THRU 121) |
| SEE NOTE 7 | | | | 2 | | 66 | MS 21919 DG8 THRU 11 | CLAMP, CUSHIONED SUPPORT (1897073-108 THRU 111) |
| SEE NOTE 7 | | | | 1 | | 65 | MS 21919 DG7 THRU 9 | CLAMP, CUSHIONED SUPPORT (1897073-107 THRU 109) |
| | | | | 1 | | 64 | 1901304-114 | NAMEPLATE, APOLLO GEN |
| | | | | 4 | | 63 | AN535-00-4 | (1897109-004) SCREW DRIVE, RD. HD |
| | | | | 1 | | 62 | 1900778 | WIRE LIST BB |
| | | | | AR | | 61 | MIL-F-14256<br>QQ-S-571 | FLUX (ES-2798)<br>FLUX TYPE AR (ES-2175 TYPE 1 OR 2) |
| | | | | AR | | 60 | QQ-S-571 | SOLDER SN60 (ES-2175 ALLOY I) |
| SEE NOTE 6 | | | | 8 | | 59 | 1016151-004 | NUT, SELF LOCKING |
| | | | | 8 | | 58 | AN500AD4-7 | (1897012-425) SCREW |
| | | | | | | 57 | | |
| | | | | 10 | | 56 | MS-35216-26 | SCREW, PAN HEAD |
| SEE NOTE 6 | | | | 1 | | 55 | 1015825-014 | ROTARY SWITCH |
| SEE NOTE 6&8 | | | | 10 | | 54 | 1016005-1 | SHIM, SLIDE LOCATING |
| SEE NOTE 7 | | | | 2 | | 53 | MS 21919 DG4 THRU 6 | CLAMP, CUSHIONED, SUPPORT (1897073-104 THRU 106 |
| | | | | 1 | | 52 | 1900221-031 | SWITCH & CONNECTOR ASSY. |
| SEE NOTE 6 | | | | 1 | | 51 | 1015873-1 | FUSE HOLDER |
| | | | | 2 | | 50 | MS90078-7-1 | (1897077-107) FUSE |
| SEE NOTE 6 | | | | 1 | | 49 | 1015791-010 | CHASSIS SLIDE ASSY. |
| SEE NOTE 6 | | | | 1 | | 48 | 1015791-009 | CHASSIS SLIDE ASSY. |
| | | | | X | | 47 | 1900498 | SCHEMATIC DIAGRAM |
| | | | | | | 46 | | |
| | | | | | | 45 | | |
| | | | | 1 | | 44 | 1015869-336 | SWITCH, PUSH BUTTON |
| | | | | 1 | | 43 | 1015869-512 | |
| | | | | 1 | | 42 | 1015869-806 | |
| | | | | 1 | | 41 | 1015869-345 | |
| | | | | 1 | | 40 | 1015869-726 | |
| SEE NOTE 6 | | | | 1 | | 39 | 1015869-805 | SWITCH, PUSH BUTTON |
| | | | | 1 | | 38 | 1900096 | HARNESS "A" ASSY. |
| | | | | | | 37 | | |
| | | | | 14 | | 36 | MS35200-25 | SCREW, MACH., FLAT CSK x RECS |
| | | | | 6 | | 35 | MS35200-40 | SCREW, MACH., FLAT CSK x RECS. |
| | | | | 10 | | 34 | MS91528-2K2B | (1897080-023) KNOB |
| SEE NOTE 6 | | | | 2 | | 33 | 1015825-8 | ROTARY SWITCH |
| SEE NOTE 6 | | | | 1 | | 32 | 1015825-6 | ROTARY SWITCH |
| SEE NOTE 6 | | | | 3 | | 31 | 1015825-4 | ROTARY SWITCH |
| | | | | 1 | | 30 | 1900221-021 | SWITCH & CONNECTOR ASSY. |
| | | | | 1 | | 29 | 1900221-011 | SWITCH & CONNECTOR ASSY. |
| | | | | | | 28 | | |
| SEE NOTE 6 | | | | 1 | | 27 | 1015943-1 | BEZEL - 2 DIGIT |
| SEE NOTE 6 | | | | 2 | | 26 | 1015912-193 | SCREW, NYLON-FLAT HEAD |
| | | | | 1 | | 25 | 1900220 | SPACER, DIGITAL READOUT |
| SEE NOTE 6 | | | | 1 | | 24 | 1015844-001 | DIGITAL READOUT |
| | | | | 2 | | 23 | MS-90078-12-1 | (1897077-112) FUSE |
| | | | | 2 | | 22 | MS-26572-1 | FUSE HOLDER - SPARE |
| SEE NOTE 6 | | | | 1 | | 21 | 1015873-008 | FUSE HOLDER |
| | | | | | | 20 | | |
| | | | | 18 | | 19 | AN363C632 | (1896990-261) NUT, LOCK |
| | | | | 1 | | 18 | 1900779 | HARNESS "B" ASSY. |
| | | | | | | 17 | | |
| | | | | | | 16 | | |
| SEE NOTE 6 | | | | 10 | | 15 | 1015826-304 | SCREW, FLAT HEAD, HEX. SOCKET |
| SEE NOTE 6 | | | | 1 | | 14 | 1015981-005 | STANDOFF, HEX. |
| | | | | 1 | | 13 | MS35216-24 | SCREW, PAN HD |
| | | | | 29 | | 12 | MS35333-71 | WASHER, LOCK, INTERNAL TOOTH |
| | | | | 12 | | 11 | AN960C-6 | (1897006-026) WASHER, FLAT |
| | | | | 12 | | 10 | 1016000-005 | STANDOFF-THREADED HEXAGON |
| | | | | 1 | | 9 | 1900224 | COMPONENT MOUNT ASSY. |
| | | | | 16 | | 8 | MS-35216-25 | SCREW, PAN HEAD |
| | | | | 1 | | 7 | 1900217 | TRANSFORMER & REL PNL ASSY. |
| | | | | 6 | | 6 | AN363C1032 | (1896990-011) NUT, SELF-LOCKING |
| SEE NOTE 6 | | | | 6 | | 5 | 1006783-45 | SCREW-BUTTON HEAD |
| SEE NOTE 6 | | | | 8 | | 4 | AN507C832R12 | (1897003-568) SCREW-FL HD 100° |
| | | | | 2 | | 3 | 1900015-081 | HANDLE ASSY. |
| | | | | 1 | | 2 | 1900210 | DRAWER INSEP. ASSY. |
| | | | | 1 | | 1 | 1900209 | FRONT PANEL |

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900004-011 | 1900004-011 | -011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± — ± — ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN CUZZO DATE 6 JUN 63
CHECKED SQUIRES 8 JUN 63
APPROVAL AMBRUN 14 JUN 63
APPROVAL Sep 64
NASA APPROVAL
MIT APPROVAL 23 Sep 64

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

PRIMARY SIGNAL SELECTOR ASSEMBLY

CODE IDENT NO.
SIZE E
1900057
SCALE FULL
SHEET 1 OF 3

1900057 AF

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. SOLDER PER MIL-S-6872 (ES-2505-1 TYPE 2 FLUX) USING ITEMS 97 AND 106.
3. DIMENSION A MUST BE EQUAL TO DIMENSION B WITHIN .040.
4. DRAWER SLIDE MOUNTING SCREWS AND FRONT PANEL MOUNTING SCREWS SHALL BE SUBJECTED TO TORQUE OF 37-40 LB. IN. AT INSTALLATION.
6. VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING
8. MARK "SCHEM" AND APPLICABLE SCHEMATIC DRAWING NUMBER PER ND 1002019, .12 HIGH COLOR BLACK.
9. MARK WEIGHT OF ASSEMBLY, (50 LBS) PER ND1002123, ADJACENT TO NAMEPLATE LOCATION.
11. SHIM TO FIT. PEEL OFF EXCESS SHIM STOCK.
12. SECURE ITEM 122 USING ITEM 123.
13. ~~SERIALIZE PER ND 1002023.~~
14. MARK APPLICABLE CONT. NO. AND SERIAL NO. ON ITEM (113) IN ACCORDANCE WITH ND 1002023. LETTERS AND NUMERALS TO BE .06 HIGH.
15. SECURE SCREWS ITEM 107 USING ITEM 148
16. MARK " DWG REV LTR ___ " AND APPLICABLE DRAWING REVISION LETTER PER ND 1002019 .12 HIGH, COLOR BLACK IN LOCATION SHOWN.

TABLE II

| CIRCUIT POINT | | |
|---|---|---|
| FROM | | TO |
| R23 | YELLOW | TB1-29 |
| | RED | -29 |
| | GRN | -30 |
| R24 | YELLOW | -31 |
| | RED | -31 |
| | GRN | -30 |
| R28 | YELLOW | -67 |
| | RED | -67 |
| | GRN | -65 |
| R29 | YELLOW | -65 |
| | RED | -65 |
| | GRN | -66 |
| R45 | YELLOW | -27 |
| | RED | -27 |
| | GRN | -28 |
| R47 | YELLOW | -23 |
| | RED | -25 |
| | GRN | -26 |
| R48 | YELLOW | -23 |
| | RED | -24 |
| | GRN | -26 |
| R59 | YELLOW | -68 |
| | RED | -68 |
| | GRN | -69 |
| R60 | YELLOW | -70 |
| | RED | -70 |
| | GRN | -71 |
| R61 | YELLOW | -72 |
| | RED | -72 |
| | GRN | -73 |

TABLE I

| ITEM NO. | REF DESIG | CR CATHODE CIRCUIT POINT | CR ANODE CIRCUIT POINT |
|---|---|---|---|
| 52 | CR15 | K12-1 | K12-5 |
| 52 | CR17 | K10-1 | K10-5 |
| 52 | CR19 | K8-1 | K8-5 |
| ~~52~~ | ~~CR20~~ | ~~S8-1~~ | ~~S8-2~~ |

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
| J | | REPLACES REV. "H" WITH CHANGE PER MXC 190314<br>PER TDRR | | 7 NOV 63 | SH EH |
| K | | ITEM 81 P/N WAS 1016051-163 PER MXC 190603 TDRR 0EE20 | | 13 JAN 64 | E.M. |
| L | | ADDED ITEMS 124 & 125 PER MXC 190927 | | 3 JAN 64 | E.M. |
| M | | ITEM 6 P/N WAS 1016038-512 PER MXC 191048 | | 13 JAN 64 | E.M. |
| N | | CHANGE IN ACCORDANCE WITH MXC 191346 | | 24 JAN 64 | EH RJW |
| P | | ITEM 2 WAS 1900770, ITEM 3 WAS 1900771, ITEM 121 ADDED -1 AFTER P/N 1016125 PER MXC 191664 | | 28 JAN 64 | EH RJW |
| R | | REVISION STATUS CHANGED PER MXC 191869 | | 28 JAN 64 | EH RJW |
| S | | REVISION STATUS CHANGED PER MXC 192015 | | 29 JAN 64 | EH RJW |
| T | | ITEM 12 WAS 1015825-14 PER MXC 192462 | | 29 JAN 64 | EH RJW |
| U | | ITEM 104, 105 & 117 WAS MS35216-9, -25 & -34 RESP. PER MXC 192463 | | 29 JAN 64 | EH RJW |
| V | | ADDED TABLE II PER CM 192732 | | 30 JAN 64 | EH RJW |
| W | | ADDED NOTE 14, ITEM 54 WAS (7) MS16108-1A & ADDED P/N 790112-002 TO DESCR, ADDED P/N TO ITEM 113 PER CM192804 | | 30 JAN 64 | EH RJW |
| Y | | REVISION STATUS CHANGED PER 192830 | | 31 JAN 64 | EH RJW |
| Z | | ITEM 99 WAS (10) 310617-4 PER CM 192912 | | 3 FEB 64 | EH RJW |
| AA | | ISSUE IN ERROR VOID. PER CM 193196 | | 4 FEB 64 | EH RJW |
| AB | | ADDED ITEM 146 & ASSOC INFO PER CM193216 | | 4 FEB 64 | EH RJW |
| AC | | REVISION STATUS CHANGED PER 193581 TDRR 0EE24 | | 4 FEB 64 | EH RJW |
| AD | | ADDED P/N 1900905 TO ITEM 114 PER CM 193807 TDRR 0EE25 | | 4 FEB 64 | EH RJW |
| AE | | CHANGE IN ACCORDANCE WITH CM-194036 | | 18-FEB-64 | J.B. MEM |
| AF | – | CHANGE IN ACCORDANCE WITH CM-194150 TDRR 0EE26 | – | 24 FEB 64 | YRS E F |
| AG | | CHANGE IN ACCORDANCE WITH CM-194592 | – | 3 MAR 64 | JJJ W.E. |
| AH | | CHANGE IN ACCORDANCE WITH CM 195034 | | 4 MAR 64 | JJJ |
| AJ | | CHANGE IN ACCORDANCE WITH CM 195222 | | 6 MAR 64 | |
| AK | F8 | CHANGE IN ACCORDANCE WITH CM CM195338 | | 17 MAR 64 | GG |
| AL | B-5 | CHANGE IN ACCORDANCE WITH CM 195497 | | 30 MAR 64 | JWP |
| AM | E-7 | CHANGE IN ACCORDANCE WITH CM 195828 TDRR 0EF27 | | 8 APR 64 | JWP MEM |
| AN | G8 | CHANGE IN ACCORDANCE WITH CM 195964 | | 17 APR 64 | |

| SHEET 1 | SHEET 2 | SHEET 3 |
|---|---|---|
| AN | AN | AL |
| AM | AK | AL |
| AL | AK | AL |
| AK | AK | AF |
| AJ | AJ | AF |
| AH | AE | AF |
| AG | AE | AF |
| AF | AE | AF |
| AE | AE | Y |
| AD | AC | Y |
| AC | AC | Y |
| AB | Z | Y |
| AA | Z | Y |
| Z | Z | Y |
| Y | W | Y |
| W | W | W |
| V | S | U |
| U | S | U |
| T | S | S |
| S | S | S |
| R | R | P |
| P | P | P |
| N | N | N |
| M | J | J |
| L | J | J |
| K | J | J |
| J | J | J |

REVISION STATUS OF SHEETS

(J) REPLACES REV "H" WITH CHANGE

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01256 DATE 15 MAY 63

| | QTY REQ'D 011 | EFFECTIVITY | ITEM NO | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|
| | X | | 150 | PS-1900058 | PROCUREMENT SPECIFICATION |
| | 1 | | 149 | 1900887 | WIRE LIST A-A |
| | AR | | 148 | MIL-S-40083-CL30 | (ES-2544-5) SEALING COMPOUND |
| SEE NOTE 6 | 4 | | 147 | 1015860-005 | SPACER |
| | ~~X~~ | | ~~146~~ | ~~ATP-1900058~~ | ~~ASSEMBLY TEST PROCEDURE~~ |
| | 1 | | 145 | MS21919DG14 | (1897073-114) CLAMP |
| | 1 | | 144 | MS21919DG11 | (1897073-111) CLAMP |
| | 1 | | 143 | MS21919DG9 | (1897073-109) CLAMP |
| | 1 | | 142 | MS21919DG6 | (1897073-106) CLAMP |
| | 1 | | 141 | MS21919DG5 | (1897073-105) CLAMP |
| | 2 | | 140 | MS16108-3A | (790112-003) JACK-TEST POINT |
| SEE NOTE 6 | 1 | | 139 | 1016057-003 | RESISTOR, VARIABLE |
| | 2 | | 138 | F02A250V1/4AS | (1897099-105) FUSE |
| | 3 | | 137 | F02A250V3AS | (1897099-112) FUSE |
| | 2 | | 136 | 1016236-1 | FUSE |
| | 6 | | 135 | 1016236-3 | FUSE |
| | 1 | | 134 | 1016172 | TRANSFORMER |
| ~~SEE NOTE 6~~ | ~~2~~ | | ~~133~~ | ~~1016168~~ | ~~DIODE~~ |
| ~~SEE NOTE 6~~ | ~~2~~ | | ~~132~~ | ~~1016167~~ | ~~DIODE~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~131~~ | ~~1016054-018~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~130~~ | ~~1016052-2~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~2~~ | | ~~129~~ | ~~1016054-017~~ | ~~RESISTOR, FIXED~~ |
| | ~~1~~ | | ~~128~~ | ~~RN65B2491F~~ | ~~(1896975-327) RESISTOR, FIXED~~ |
| | ~~1~~ | | ~~127~~ | ~~RN65B1501F~~ | ~~(1896975-306) RESISTOR, FIXED~~ |
| | 1 | | 126 | 1015989-009 | RESISTOR, VARIABLE |
| | 1 | | 125 | 1900705 | NAMEPLATE, APOLLO, GEN |
| | 4 | | 124 | AN535-00-4 | SCREW, DRIVE, ROUNDHEAD |
| | AR | | 123 | MIL-S-40083 (ORD) CLASS 20 | SEALING AND RETAINING COMPOUND (ES-2544-3) |
| | ~~4~~ | | ~~122~~ | ~~MS35216-12~~ | ~~SCREW-MACHINE, PAN HD.~~ |
| | 1 | | 121 | 1016125-1 | BRACKET, MOUNTING |
| | 2 | | 120 | MS35216-13 | SCREW-MACHINE, PAN HD. |
| | 8 | | 119 | 1016005-1 | SHIM, SLIDE LOCATING |
| | 1 | | 118 | MS35431-3 | TERMINAL LUG |
| | 4 | | 117 | MS35216-33 | SCREW, PAN HD. |
| | ~~6~~ | | ~~116~~ | ~~AN960-C6~~ | ~~WASHER, FLAT~~ |
| | X | | 115 | | WIRING DIAGRAM |
| | X | | 114 | 1900905 | SCHEMATIC DIAGRAM |
| | 1 | | 113 | 1901304-102 | NAMEPLATE |
| | 4 | | 112 | MS35216-30 | SCREW-MACHINE PAN HEAD |
| | 6 | | 111 | MS35216-14 | SCREW-MACHINE PAN HEAD |
| | 8 | | 110 | MS35338-79 | WASHER, LOCK, SPLIT |
| | 18 | | 109 | AN960C6 (1897006-026) | WASHER-FLAT |
| | 8 | | 108 | MS35216-24 | SCREW-MACHINE PAN HEAD |
| SEE NOTE 6 | 8 | | 107 | 1015831-253 | SCREW-FLAT HEAD |
| | AR | | 106 | MIL-F-14256 | FLUX (ES-2798) |
| | | | | QQ-S-571 | FLUX TYPE AR (ES-2175 TYPE 1 OR 2) |
| | 10 | | 105 | MS35216-8 | SCREW-MACHINE PAN HEAD |
| | 46 | | 104 | MS35216-27 | SCREW-MACHINE PAN HEAD |
| | 6 | | 103 | AN363C1032(1896990-011) | NUT-SELF LOCKING |
| SEE NOTE 6 | 6 | | 102 | 1006783-45 | SCREW-BUTTON HEAD |
| | 2 | | 101 | AN507C632R6(1897003-534) | SCREW-FLAT HEAD |
| | 4 | | 100 | AN507C832R6(1897003-564) | SCREW-FLAT HEAD |
| | 14 | | 99 | 1016151-004 | NUT-SELF LOCKING |
| | 56 | | 98 | AN363C632(1896990-261) | NUT-SELF LOCKING |
| | AR | | 97 | QQ-S-571 | SOLDER SN 60 (ES-2175 ALLOY) |
| ~~SEE NOTE 6~~ | ~~4~~ | | ~~96~~ | ~~1015860-005~~ | ~~SPACER~~ |
| SEE NOTE 6 | 4 | | 95 | 1015860-003 | SPACER |
| | ~~4~~ | | ~~94~~ | ~~SE20X002(1896962-004)~~ | ~~TERMINAL MIL-T-55155~~ |
| SEE NOTE 6 | 8 | | 93 | 1006783-44 | SCREW-BUTTON HEAD |
| SEE NOTE 6 | 1 | | 92 | 1015785-010 | SLIDE ASSY L.H. |
| SEE NOTE 6 | 1 | | 91 | 1015785-009 | SLIDE ASSY R.H. |

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

| | QTY REQ'D 011 | EFFECTIVITY | ITEM NO | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|
| | 1 | | 90 | 1900148 | WIRING HARNESS A |
| SEE NOTE 6 | 1 | | 89 | 1015869-155 | LIGHT INDICATOR |
| | 1 | | 88 | RE70-G-69R8 (1897094-274) | RESISTOR MIL-R-18546 |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~87~~ | ~~1015970-448~~ | ~~RESISTOR, FIXED~~ |
| SEE NOTE 6 | 5 | | 86 | 1015989-004 | RESISTOR-VARIABLE |
| SEE NOTE 6 | 4 | | 85 | 1015989-007 | RESISTOR-VARIABLE |
| | ~~1~~ | | ~~84~~ | ~~RN65B1001F (1896975-288)~~ | ~~RESISTOR, FIXED MIL-R-10509/2~~ |
| | ~~2~~ | | ~~83~~ | ~~RN65B1003F (1896975-401)~~ | ~~RESISTOR, FIXED MIL-R-10509/2~~ |
| ~~SEE NOTE 6~~ | ~~2~~ | | ~~82~~ | ~~1016056-001~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~81~~ | ~~(1896370-237) RN75C~~ | ~~RESISTOR, FIXED~~ |
| SEE NOTE 6 | 2 | | 80 | 1016055-001 | RESISTOR, FIXED |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~79~~ | ~~1016054-16~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~78~~ | ~~1016054-15~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~77~~ | ~~1016054-14~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~4~~ | | ~~76~~ | ~~1016054-13~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~75~~ | ~~1016054-12~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~2~~ | | ~~74~~ | ~~1016054-11~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~73~~ | ~~1016054-10~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~72~~ | ~~1016054-9~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~71~~ | ~~1016054-8~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~70~~ | ~~1016054-7~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~69~~ | ~~1016054-6~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~68~~ | ~~1016054-1~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~67~~ | ~~1016052-1~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~66~~ | ~~1016053-12~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~65~~ | ~~1016053-11~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~64~~ | ~~1016053-10~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~63~~ | ~~1016053-9~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~62~~ | ~~1016053-8~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~61~~ | ~~1016053-7~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~60~~ | ~~1016053-6~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~59~~ | ~~1016053-5~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~58~~ | ~~1016053-4~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~4~~ | | ~~57~~ | ~~1016053-3~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~56~~ | ~~1016053-2~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~2~~ | | ~~55~~ | ~~1016053-1~~ | ~~RESISTOR, FIXED~~ |
| | 5 | | 54 | MS16108-2A | (790112-002) JACK-TEST POINT |
| | ~~1~~ | | ~~53~~ | ~~1016283~~ | ~~SENSOR, IMU~~ |
| | 7 | | 52 | 1N649 (1896966-006) | SEMICONDUCTOR MIL-S-19500 |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~51~~ | ~~1N3016B(1896966-063)~~ | ~~SEMICONDUCTOR DEVICE DIODE MIL-S-19500~~ |
| | | | | | |
| SEE NOTE 6 | 1 | | 49 | 1015939-12 | SEMICONDUCTOR DEVICE, DIODE |
| SEE NOTE 6 | 7 | | 48 | 1015967-001 | SEMICONDUCTOR DEVICE, DIODE |
| SEE NOTE 6 | 7 | | 47 | 1016024-001 | RELAY-ARMATURE |
| SEE NOTE 6 | 8 | | 46 | 1015837-001 | RELAY-ARMATURE |

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

| | QTY REQ'D 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|
| SEE NOTE 6 | 1 | | 45 | 1015833-11 | RELAY-THERMAL, TIME DELAY |
| SEE NOTE 6 | 1 | | 44 | 1015914-002 | RELAY-ARMATURE |
| SEE NOTE 6 | 3 | | 43 | 1015832-318 | RELAY |
| SEE NOTE 6 | 1 | | 42 | 1015832-320 | RELAY |
| SEE NOTE 6 | 2 | | 41 | 1015832-312 | RELAY |
| SEE NOTE 6 | 1 | | 40 | 1016047-017 | CAPACITOR |
| SEE NOTE 6 | 1 | | 39 | 1016063 | REACTOR |
| SEE NOTE 6 | 1 | | 38 | 1015998 | AMPLIFIER, MAGNETIC |
| SEE NOTE 6 | 1 | | 37 | 1015839 | AMPLIFIER, MAGNETIC |
| SEE NOTE 6 | 1 | | 36 | 1015840 | AMPLIFIER, MAGNETIC |
| SEE NOTE 6 | 1 | | 35 | 1016103 | TRANSFORMER |
| SEE NOTE 6 | 1 | | 34 | 1015997 | TRANSFORMER, POWER STEP DOWN |
| SEE NOTE 6 | 1 | | 33 | 1016098-8 | FUSEHOLDER |
| SEE NOTE 6 | 1 | | 32 | 1016098-7 | FUSEHOLDER |
| SEE NOTE 6 | 1 | | 31 | 1016098-10 | FUSEHOLDER |
| SEE NOTE 6 | 1 | | 30 | 1016098-9 | FUSEHOLDER |
| SEE NOTE 6 | 1 | | 29 | 1016098-4 | FUSEHOLDER-ILLUMINATED |
| SEE NOTE 6 | 1 | | 28 | 1016098-3 | FUSEHOLDER-ILLUMINATED |
| SEE NOTE 6 | 2 | | 27 | 1016098-5 | FUSEHOLDER-ILLUMINATED |
| SEE NOTE 6 | 3 | | 26 | 1016098-2 | FUSEHOLDER-ILLUMINATED |
| SEE NOTE 6 | 2 | | 25 | 1016098-1 | FUSEHOLDER-ILLUMINATED |
| SEE NOTE 6 | 1 | | 24 | 1015869-154 | LIGHT-INDICATOR |
| SEE NOTE 6 | 1 | | 23 | 1015869-153 | LIGHT-INDICATOR |
| SEE NOTE 6 | 1 | | 22 | 1015869-160 | LIGHT-INDICATOR |
| SEE NOTE 6 | 1 | | 21 | 1015869-350 | LIGHT-INDICATOR SWITCH ASSY |
| SEE NOTE 6 | 1 | | 20 | 1015869-531 | LIGHT-INDICATOR SWITCH ASSY |
| SEE NOTE 6 | 1 | | 19 | 1015869-724 | LIGHT-INDICATOR SWITCH ASSY |
| SEE NOTE 6 | 1 | | 18 | 1015869-720 | LIGHT-INDICATOR SWITCH ASSY |
| SEE NOTE 6 | 1 | | 17 | 1015869-809 | LIGHT-INDICATOR SWITCH ASSY |
| | 4 | | 16 | 1015974-112 | KNOB |
| SEE NOTE 6 | 1 | | 15 | 1016057-002 | RESISTOR, VARIABLE |
| SEE NOTE 6 | 2 | | 14 | 1016057-001 | RESISTOR, VARIABLE |
| | 3 | | 13 | MS91528-2K2B | KNOB |
| SEE NOTE 6 | 1 | | 12 | 1015825-033 | SWITCH, ROTARY |
| SEE NOTE 6 | 1 | | 11 | 1015859-004 | SWITCH, ROTARY |
| SEE NOTE 6 | 1 | | 10 | 1015859-003 | SWITCH, ROTARY |
| SEE NOTE 6 | 1 | | 9 | 1016080-105 | AMMETER-MICROAMPERES, DC. |
| SEE NOTE 6 | 2 | | 8 | 1016080-505 | AMMETER-MICROAMPERES, DC. |
| SEE NOTE 6 | 1 | | 7 | 1016080-205 | AMMETER-MICROAMPERES, DC. |
| SEE NOTE 6 | 1 | | 6 | 1016038-612 | AMMETER-MICROAMPERES, DC. |
| | 1 | | 5 | 1900772 | FRONT PANEL |
| | 2 | | 4 | 1900015-071 | HANDLE ASSY |
| | 1 | | 3 | 1900942 | TERMINAL BOARD (INSEP ASSY) |
| | 1 | | 2 | 1900941 | TERMINAL BOARD (INSEP ASSY) |
| | 1 | | 1 | 1900769 | CHASSIS (INSEP ASSY) |

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900004-011 | 1900004-011 | |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL --
CONTRACT NAS9-497

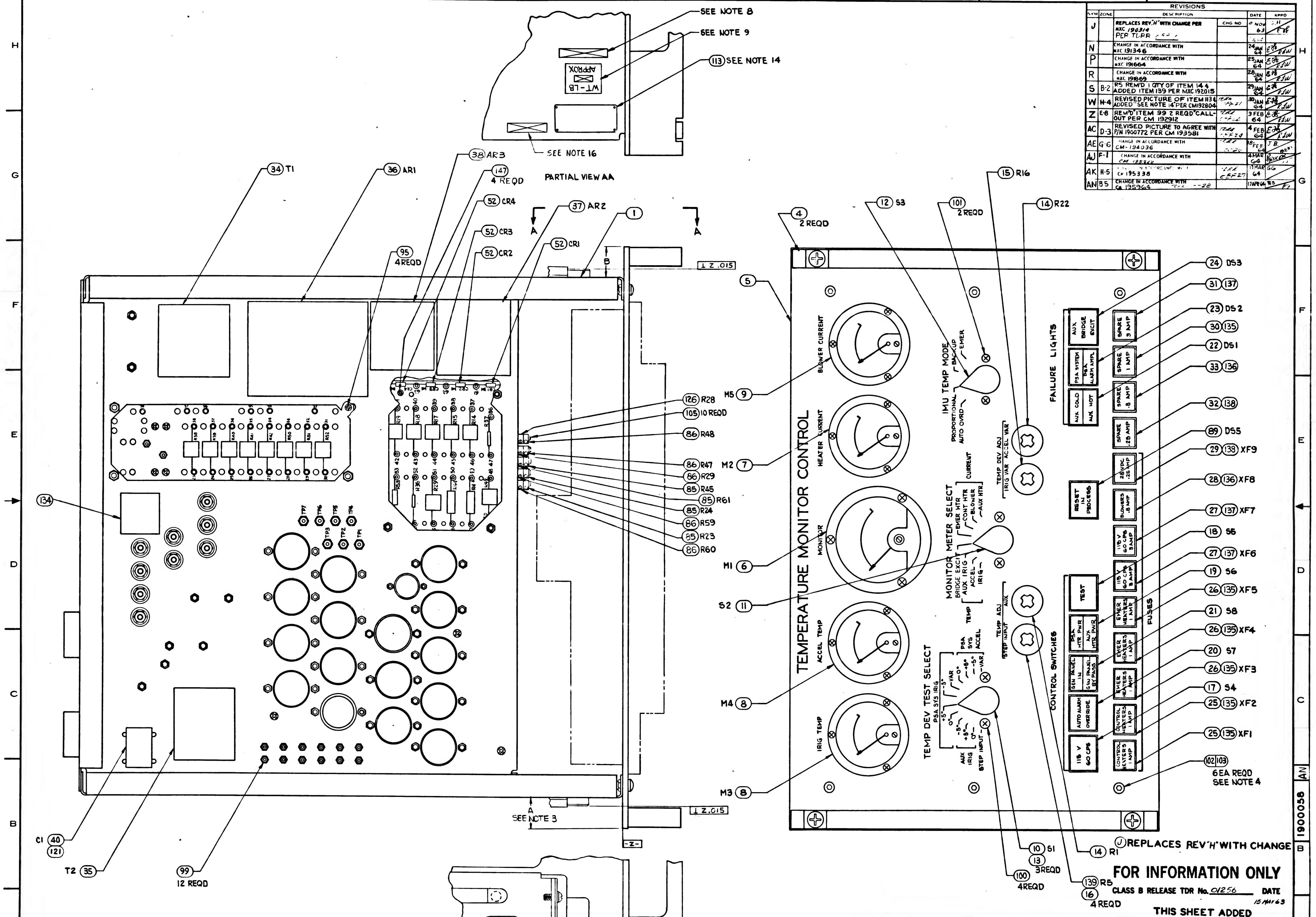
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Summerville DATE 5 SEP 63
CHECKED Wilson 10 SEP 63
APPROVAL H. Winters
APPROVAL 5/11/64
NASA APPROVAL W. J. Rhine 5-26-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TEMPERATURE MONITOR
AND CONTROL
ASSEMBLY

CODE IDENT NO.
SIZE E
1900058
SCALE FULL
SHEET 1 OF 3

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| J | | REPLACES REV "H" WITH CHANGE PER MXC 190314 PER TDRR [illegible] | | 0 NOV 63 | [illegible] |
| N | | CHANGE IN ACCORDANCE WITH MXC 191346 | | 24 JAN 64 | E.R.R. RJW |
| P | | CHANGE IN ACCORDANCE WITH MXC 191664 | | 25 JAN 64 | E.R.R. RJW |
| R | | CHANGE IN ACCORDANCE WITH MXC 191869 | | 28 JAN 64 | E.R.R. RJW |
| S | B-2 | R5 REM'D 1 QTY OF ITEM 14 & ADDED ITEM 139 PER MXC 192015 | | 29 JAN 64 | E.R.R. RJW |
| W | H-4 | REVISED PICTURE OF ITEM 113 & ADDED "SEE NOTE 14" PER CM192804 | [illegible] | 30 JAN 64 | E.R.R. RJW |
| Z | E-8 | REM'D ITEM 99 2 REQD CALL-OUT PER CM 192912 | [illegible] | 3 FEB 64 | E.R.R. RJW |
| AC | D-3 | REVISED PICTURE TO AGREE WITH P/N 1900772 PER CM 193581 | [illegible] | 4 FEB 64 | E.R.R. RJW |
| AE | G-6 | CHANGE IN ACCORDANCE WITH CM-194036 | [illegible] | 18 FEB 64 | J B. |
| AJ | F-1 | CHANGE IN ACCORDANCE WITH CM 195322 | | 4 MAR 64 | [illegible] |
| AK | H-5 | CHANGE IN ACCORDANCE WITH CM 195338 | [illegible] | 11 MAR 64 | GG |
| AN | B5 | CHANGE IN ACCORDANCE WITH CM 195964 | | 17 APR 64 | TS |



Ⓙ REPLACES REV "H" WITH CHANGE

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01256 DATE 15 MAY 63

THIS SHEET ADDED

| | |
|---|---|
| 1900004-011 | 1900004-011 |
| NEXT ASSY | USED ON |
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

| FRACTIONS | DECIMALS | ANGLES |
|---|---|---|
| +– | +– | +– |
| –– | –– | –– |

DO NOT SCALE THIS DRAWING

MATERIAL —

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN Summerville DATE 5 SEP 63
CHECKED Wilson 10 SEP 63
APPROVAL H Weston 18 SEP 63
APPROVAL [illegible] 5/20/64
NASA APPROVAL 5-26-64
MIT APPROVAL

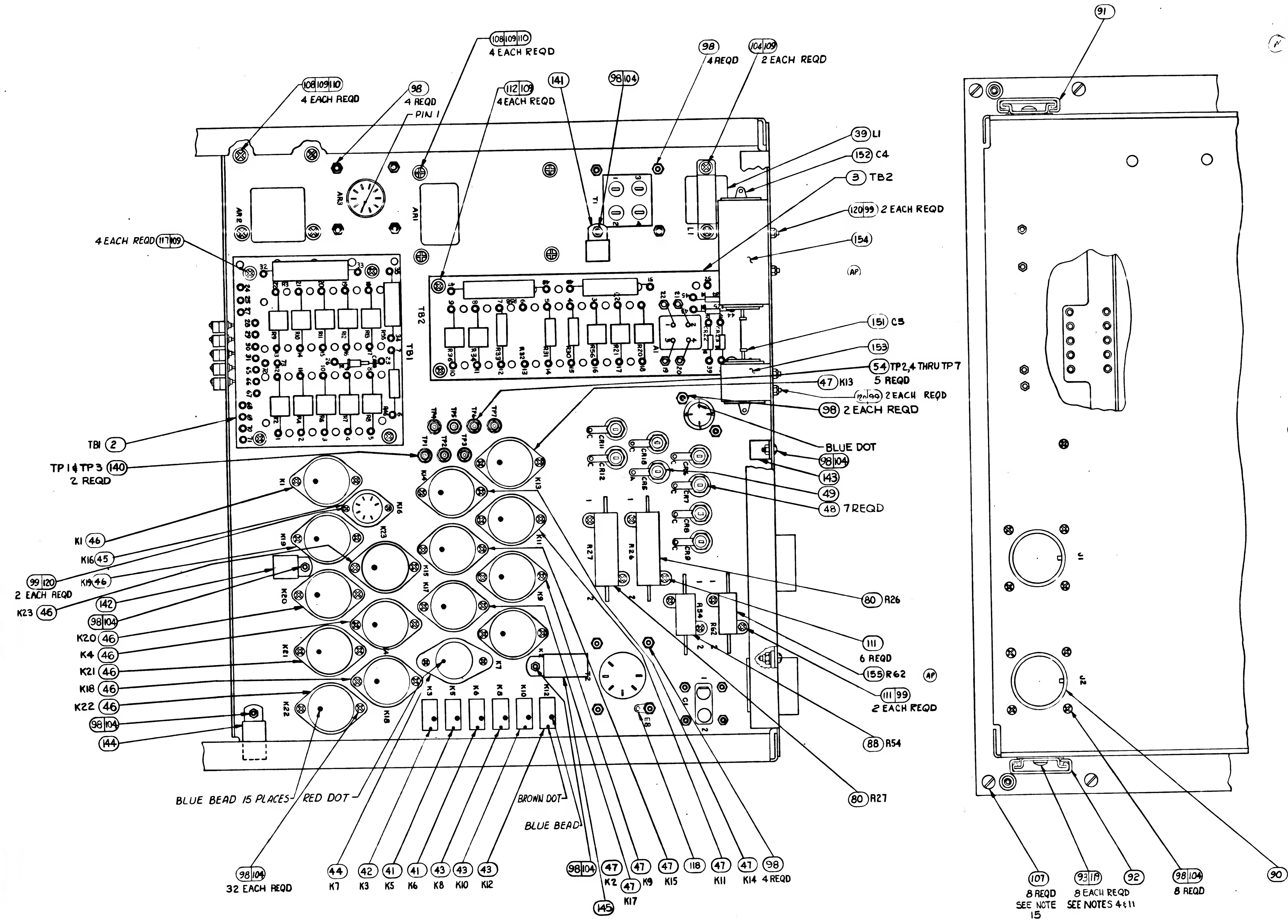
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TEMPERATURE MONITOR
AND CONTROL
ASSEMBLY

CODE IDENT NO | SIZE E | 1900058

SCALE FULL | SHEET 2 OF 3

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| J | | REPLACES REV."H" WITH CHANGE PER MXC 190314 PER TDRR [illegible] | | 6 NOV 63 | |
| N | | CHANGE IN ACCORDANCE WITH MXC 191346 | | 23 JAN 64 | |
| P | | CHANGE IN ACCORDANCE WITH MXC 91664 | | 28 JAN 64 | |
| S | E-5 | REM'D 1 QTY (CR13) OF ITEM 48 PER MXC 192015 | | 29 JAN 64 | |
| U | F-7<br>E,G-4 | ITEM 109 WAS 8 QTY. REM'D ITEM 116 (6) AN960-C6 & REPLACED WITH ITEM 99 PER MXC 192463 | | 29 JAN 64 | |
| W | E-6 | ADDED ITEM 140. REMD 2 QTY OF ITEM 54 (TP1 & TP3) & REPLACED WITH ITEM 140 PER CM 192804 | | 30 JAN 64 | |
| Y | C,D-7<br>C,F-5<br>E-4 | ADDED ITEMS 141 THRU 145, ADDED 4 EACH QTY TO ITEMS 98 & 104 PER CM 192830 | TDRR 08821 | 3 JAN 64 | |
| AF | — | CHANGE IN ACCORDANCE WITH CM-194150 TDRR 08826 | — | 26 FEB 64 | |
| AL | D-4 | CHANGE IN ACCORDANCE WITH CM-195497 TDRR 08827 | — | 30 MAR 64 | |
| AP | | CHANGE IN ACCORDANCE WITH CM196970 TDRR 12557 | | 6 JUN 64 | GG EK |



Ⓙ REPLACES REV"H" WITH CHANGE

**FOR INFORMATION ONLY**

CLASS "B" RELEASE TDR No. 01256 DATE 15 MAY 63

**THIS SHEET ADDED**

| | |
|---|---|
| 1900004-011 | 1900004-011 |
| NEXT ASSY | USED ON |
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN D. Dobbert DATE 5 SEPT 63
CHECKED Nelson 10 SEP 63
APPROVAL 18 SEP 63
APPROVAL
NASA APPROVAL 5-26-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

TEMPERATURE MONITOR
AND CONTROL ASSEMBLY

CODE IDENT NO
SIZE E
1900058
SCALE 1:1
SHEET 3 OF 3

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. SOLDER PER MIL-S-6872 (ES-2505-1 TYPE 2 FLUX) USING ITEMS 97 AND 106.
3. DIMENSION A MUST BE EQUAL TO DIMENSION B WITHIN .040.
4. DRAWER SLIDE MOUNTING SCREWS AND FRONT PANEL MOUNTING SCREWS SHALL BE SUBJECTED TO TORQUE OF 37-40 LB. IN. AT INSTALLATION.
6. VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING
8. MARK "SCHEM" AND APPLICABLE SCHEMATIC DRAWING NUMBER PER ND 1002019, .12 HIGH COLOR BLACK.
9. MARK WEIGHT OF ASSEMBLY, (50 LBS) PER ND 1002123, ADJACENT TO NAMEPLATE LOCATION.
11. SHIM TO FIT. PEEL OFF EXCESS SHIM STOCK.
12. SECURE ITEM 122 USING ITEM 123.
13. ~~SERIALIZE PER ND 1002023.~~
14. MARK APPLICABLE CONT. NO. AND SERIAL NO. ON ITEM ⑪③ IN ACCORDANCE WITH ND 1002023. LETTERS AND NUMERALS TO BE .06 HIGH.
15. SECURE SCREWS ITEM 107 USING ITEM 148
16. MARK " DWG REV LTR ___ " AND APPLICABLE DRAWING REVISION LETTER PER ND 1002019 .12 HIGH, COLOR BLACK IN LOCATION SHOWN.

TABLE II

| CIRCUIT POINT FROM | | CIRCUIT POINT TO |
|---|---|---|
| R23 | YELLOW | TB1-29 |
| | RED | -29 |
| | GRN | -30 |
| R24 | YELLOW | -31 |
| | RED | -31 |
| | GRN | -30 |
| R28 | YELLOW | -67 |
| | RED | -67 |
| | GRN | -65 |
| R29 | YELLOW | -65 |
| | RED | -65 |
| | GRN | -66 |
| R45 | YELLOW | -27 |
| | RED | -27 |
| | GRN | -28 |
| R47 | YELLOW | -23 |
| | RED | -25 |
| | GRN | -26 |
| R48 | YELLOW | -23 |
| | RED | -24 |
| | GRN | -26 |
| R59 | YELLOW | -68 |
| | RED | -68 |
| | GRN | -69 |
| R60 | YELLOW | -70 |
| | RED | -70 |
| | GRN | -71 |
| R61 | YELLOW | -72 |
| | RED | -72 |
| | GRN | -73 |

TABLE II

| CIRCUIT POINT FROM | | CIRCUIT POINT TO |
|---|---|---|
| R57 | YELLOW | TB1-56 |
| | RED | -56 |
| | GRN | -51 |

TABLE I

| ITEM NO. | REF DESIG | CR CATHODE CIRCUIT POINT | CR ANODE CIRCUIT POINT |
|---|---|---|---|
| 52 | CR15 | K12-1 | K12-5 |
| 52 | CR17 | K10-1 | K10-5 |
| 52 | CR19 | K8-1 | K8-5 |
| ~~52~~ | ~~CR20~~ | ~~S8-1~~ | ~~S8-2~~ |

REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
|---|---|---|---|---|---|
| J | | REPLACES REV. "H" WITH CHANGE PER MXC 90314 PER TDRR [illegible] | | [illegible] 63 | SH EH |
| K | | ITEM 81 P/N WAS 1016051-163 PER MXC 190603 TDRR 08820 | | [illegible] | EM |
| L | | ADDED ITEMS 124 & 125 PER MXC 190927 | | [illegible] | EM |
| M | | ITEM 6 P/N WAS 1016038-512 PER MXC 191048 | | [illegible] | EM |
| N | | CHANGE IN ACCORDANCE WITH MXC 9.346 | | [illegible] 64 | RLW |
| P | | ITEM 2 WAS 1900770, ITEM 3 WAS 1900771, ITEM 121 ADDED -1 AFTER 1016125 PER MXC 191664 | | [illegible] 64 | RLW |
| R | | REVISION STATUS CHANGED PER MXC 19.869 | | [illegible] 64 | RLW |
| S | | REVISION STATUS CHANGED PER MXC 192015 | | [illegible] 64 | RLW |
| T | | ITEM 12 WAS 1015825-14 PER MXC 92462 | | [illegible] 64 | RLW |
| U | | ITEM 104, 105 & 117 WAS MS352 [illegible] -254-34 RESP. PER MXC 192463 | | [illegible] 64 | RLW |
| V | | ADDED TABLE II PER MXC 92732 | | [illegible] 64 | RLW |
| W | | ADDED NOTE 14, ITEM 54 WAS [illegible] 08-1A & ADDED P/N 790112-002 [illegible] ADDED P/N TO ITEM 113 PER CM 192[illegible] | | [illegible] 64 | RLW |
| Y | | REVISION STATUS CHANGED PER 192830 TDRR 08821 | | [illegible] 64 | RLW |
| Z | | ITEM 99 WAS (16)1010617-4 PER CM 192912 | | [illegible] 64 | RLW |
| AA | | ISSUE IN ERROR VOID. PER CM 193196 TDRR 08822 | | 4 FEB 64 | RLW |
| AB | | ADDED ITEM 146 & ASSOC REF PER CM 193216 TDRR 08823 | | 4 FEB 64 | RLW |
| AC | | REVISION STATUS CHANGED PER 193581 TDRR 08824 | | 4 FEB 64 | RLW |
| AD | | ADDED P/N 1900905 TO ITEM 114 PER CM 193807 TDRR 08825 | | 4 FEB 64 | RLW |
| AE | | CHANGE IN ACCORDANCE WITH CM-194036 | | 18 FEB 64 | J.B. |
| AF | – | CHANGE IN ACCORDANCE WITH CM-194150 TDRR 08826 | – | 24 FEB 64 | |
| AG | | CHANGE IN ACCORDANCE WITH CM-194592 | – | 3 MAR 64 | W.E. |
| AH | | CHANGE IN ACCORDANCE WITH CM 195034 | | 4 MAR 64 | JJ |
| AJ | | CHANGE IN ACCORDANCE WITH CM 195222 | | 6 MAR 64 | |
| AK | F8 | CHANGE IN ACCORDANCE WITH CM CM195338 | | 17 MAR 64 | GG |
| AL | B-5 | CHANGE IN ACCORDANCE WITH CM 195497 | | 30 MAR 64 | JWP |
| AM | E-7 | CHANGE IN ACCORDANCE WITH CM 195828 TDRR 08827 | | 8 APR 64 | JWP |
| AN | G8 | CHANGE IN ACCORDANCE WITH CM 195964 TDRR 08828 | | 17 APR 64 | |
| AP | | CHANGE IN ACCORDANCE WITH CM196970 TDPR 12557 | | 5 JUN 64 | GG FK |

| SHEET 1 | SHEET 2 | SHEET 3 |
|---|---|---|
| AP | AP | AP |
| AN | AN | AL |
| AM | AK | AL |
| AL | AK | AL |
| AK | AK | AF |
| AJ | AJ | AF |
| AH | AE | AF |
| AG | AE | AF |
| AF | AE | AF |
| AE | AE | Y |
| AD | AC | Y |
| AC | AC | Y |
| AB | Z | Y |
| AA | Z | Y |
| Z | Z | Y |
| Y | W | Y |
| W | W | W |
| V | S | U |
| U | S | U |
| T | S | S |
| S | S | S |
| R | R | P |
| P | P | P |
| N | N | N |
| M | J | J |
| L | J | J |
| K | J | J |
| J | J | J |

REVISION STATUS OF SHEETS

Ⓙ REPLACES REV "H" WITH CHANGE

**FOR INFORMATION ONLY**

**CLASS B RELEASE TDR No.** 01256 **DATE** 15 MAY 63

| | | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|---|
| | | | | 2 | | 156 | MS35216-9 | SCREW-MACHINE PAN HD |
| | | | | 1 | | 155 | RE70-G-4020 (1897094-347) | RESISTOR MIL-R-15546/1 |
| SEE NOTE 6 | | | | 1 | | 154 | 1016007-006 | HOLDER-COMPONENT |
| SEE NOTE 6 | | | | 1 | | 153 | 1016007-005 | HOLDER-COMPONENT |
| | | | | 1 | | 152 | 1016341-2 | CAPACITOR |
| | | | | 1 | | 151 | 1016341-1 | CAPACITOR |
| | | | | X | | 150 | PS-1900058 | PROCUREMENT SPECIFICATION |
| | | | | 1 | | 149 | 1900887 | WIRE LIST A-A |
| | | | | AR | | 148 | MIL-S-40083-CL30 | (ES-2544-5) SEALING COMPOUND |
| SEE NOTE 6 | | | | 4 | | 147 | 1015860-005 | SPACER |
| | | | | ~~X~~ | | ~~146~~ | ~~ATP-1900058~~ | ~~ASSEMBLY TEST PROCEDURE~~ |
| | | | | 1 | | 145 | MS21919DG14 | (1897073-114) CLAMP |
| | | | | 1 | | 144 | MS21919DG11 | (1897073-111) CLAMP |
| | | | | 1 | | 143 | MS21919DG9 | (1897073-109) CLAMP |
| | | | | 1 | | 142 | MS21919DG6 | (1897073-106) CLAMP |
| | | | | 1 | | 141 | MS21919DG5 | (1897073-105) CLAMP |
| | | | | 2 | | 140 | MS16108-3A | (790112-003) JACK-TEST POINT |
| SEE NOTE 6 | | | | 1 | | 139 | 1016057-003 | RESISTOR, VARIABLE |
| | | | | 2 | | 138 | F02A250V 1/4 AS | (1897099-105) FUSE |
| | | | | 3 | | 137 | F02A250V 2AS | (1897099-112) FUSE |
| SEE NOTE 6 | | | | 2 | | 136 | 1016236-1 | FUSE |
| SEE NOTE 6 | | | | 6 | | 135 | 1016236-3 | FUSE |
| SEE NOTE 6 | | | | 1 | | 134 | 1016172 | TRANSFORMER |
| ~~SEE NOTE 6~~ | | | | ~~2~~ | | ~~133~~ | ~~1016168~~ | ~~DIODE~~ |
| ~~SEE NOTE 6~~ | | | | ~~2~~ | | ~~132~~ | ~~1016167~~ | ~~DIODE~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~131~~ | ~~1016054-018~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~130~~ | ~~1016052-2~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~2~~ | | ~~129~~ | ~~1016054-017~~ | ~~RESISTOR, FIXED~~ |
| | | | | ~~1~~ | | ~~128~~ | ~~RN65B2491F~~ | ~~(1896975-327) RESISTOR, FIXED~~ |
| | | | | ~~1~~ | | ~~127~~ | ~~RN65B1501F~~ | ~~(1896975-306) RESISTOR, FIXED~~ |
| SEE NOTE 6 | | | | 1 | | 126 | 1015989-009 | RESISTOR, VARIABLE |
| | | | | 1 | | 125 | 1900705 | NAMEPLATE, APOLLO, GEN |
| | | | | 4 | | 124 | AN535-00-4 | SCREW, DRIVE, ROUNDHEAD |
| | | | | AR | | 123 | MIL-S-40083 (ORD) CLASS 20 | SEALING AND RETAINING COMPOUND (ES-2544-3) |
| | | | | ~~4~~ | | ~~122~~ | ~~MS35216-12~~ | ~~SCREW-MACHINE, PAN HD~~ |
| SEE NOTE 6 | | | | 1 | | 121 | 1016125-1 | BRACKET, MOUNTING |
| | | | | 6 | | 120 | MS35216-13 | SCREW-MACHINE, PAN HD |
| SEE NOTE 6 | | | | 8 | | 119 | 1016005-1 | SHIM, SLIDE LOCATING |
| | | | | 1 | | 118 | MS35431-3 | TERMINAL LUG |
| | | | | 4 | | 117 | MS35216-33 | SCREW, PAN HD |
| | | | | ~~6~~ | | ~~116~~ | ~~AN960-C6~~ | ~~WASHER, FLAT~~ |
| | | | | X | | 115 | | WIRING DIAGRAM |
| | | | | X | | 114 | 1900905 | SCHEMATIC DIAGRAM |
| | | | | 1 | | 113 | 1901304-102 | NAMEPLATE |
| | | | | 4 | | 112 | MS35216-30 | SCREW-MACHINE PAN HEAD |
| | | | | 8 | | 111 | MS35216-14 | SCREW-MACHINE PAN HEAD |
| | | | | 8 | | 110 | MS35338-79 | WASHER, LOCK, SPLIT |
| | | | | 18 | | 109 | AN960C6 (1897006-026) | WASHER-FLAT |
| | | | | 8 | | 108 | MS35216-24 | SCREW-MACHINE PAN HEAD |
| SEE NOTE 6 | | | | 8 | | 107 | 1015831-253 | SCREW-FLAT HEAD |
| | | | | AR | | 106 | MIL-F-14256 | FLUX (ES-2798) |
| | | | | | | | QQ-S-571 | FLUX TYPE AR (ES-2175 TYPE 1 OR 2) |
| | | | | 8 | | 105 | MS35216-8 | SCREW-MACHINE PAN HEAD |
| | | | | 46 | | 104 | MS35216-27 | SCREW-MACHINE PAN HEAD |
| | | | | 6 | | 103 | AN363C1032 (1896990-011) | NUT-SELF LOCKING |
| SEE NOTE 6 | | | | 6 | | 102 | 1006783-45 | SCREW-BUTTON HEAD |
| | | | | 2 | | 101 | AN507C632R6 (1897003-534) | SCREW-FLAT HEAD |
| | | | | 4 | | 100 | AN507C832R6 (1897003-564) | SCREW-FLAT HEAD |
| SEE NOTE 6 | | | | 20 | | 99 | 1016151-004 | NUT-SELF LOCKING |
| | | | | 58 | | 98 | AN363C632 (1896990-261) | NUT-SELF LOCKING |
| | | | | AR | | 97 | QQ-S-571 | SOLDER SN 60 (ES-2175 ALLOY) |
| ~~SEE NOTE 6~~ | | | | ~~4~~ | | ~~96~~ | ~~1015860-008~~ | ~~SPACER~~ |
| SEE NOTE 6 | | | | 4 | | 95 | 1015860-003 | SPACER |
| | | | | ~~4~~ | | ~~94~~ | ~~SE20XD02 (1896962-004)~~ | ~~TERMINAL MIL-T-55155~~ |
| SEE NOTE 6 | | | | 8 | | 93 | 1006783-44 | SCREW-BUTTON HEAD |
| SEE NOTE 6 | | | | 1 | | 92 | 1015785-010 | SLIDE ASSY L.H. |
| SEE NOTE 6 | | | | 1 | | 91 | 1015785-009 | SLIDE ASSY R.H. |

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

| | | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|---|
| | | | | 1 | | 90 | 1900148 | WIRING HARNESS A |
| SEE NOTE 6 | | | | 1 | | 89 | 1015869-155 | LIGHT INDICATOR |
| | | | | 1 | | 88 | RE70-G-69R8 (1897094-274) | RESISTOR MIL-R-18546 |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~87~~ | ~~1015970-440~~ | ~~RESISTOR, FIXED~~ |
| SEE NOTE 6 | | | | 5 | | 86 | 1015989-004 | RESISTOR-VARIABLE |
| SEE NOTE 6 | | | | 5 | | 85 | 1015989-007 | RESISTOR-VARIABLE |
| | | | | ~~1~~ | | ~~84~~ | ~~RN65B1001F (1896975-289)~~ | ~~RESISTOR, FIXED MIL-R-10509/2~~ |
| | | | | ~~2~~ | | ~~83~~ | ~~RN65B1003F (1896975-481)~~ | ~~RESISTOR, FIXED MIL-R-10509/2~~ |
| ~~SEE NOTE 6~~ | | | | ~~2~~ | | ~~82~~ | ~~1016056-001~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~81~~ | ~~(1896970-237) RN75C1211F~~ | ~~RESISTOR, FIXED~~ |
| SEE NOTE 6 | | | | 2 | | 80 | 1016055-001 | RESISTOR, FIXED |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~79~~ | ~~1016054-16~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~78~~ | ~~1016054-15~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~77~~ | ~~1016054-14~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~4~~ | | ~~76~~ | ~~1016054-13~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~75~~ | ~~1016054-12~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~2~~ | | ~~74~~ | ~~1016054-11~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~73~~ | ~~1016054-10~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~72~~ | ~~1016054-9~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~71~~ | ~~1016054-8~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~70~~ | ~~1016054-7~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~69~~ | ~~1016054-6~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~68~~ | ~~1016054-1~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~67~~ | ~~1016052-1~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~66~~ | ~~1016053-12~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~65~~ | ~~1016053-11~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~64~~ | ~~1016053-10~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~63~~ | ~~1016053-9~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~62~~ | ~~1016053-8~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~61~~ | ~~1016053-7~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~60~~ | ~~1016053-6~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~59~~ | ~~1016053-5~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~58~~ | ~~1016053-4~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~4~~ | | ~~57~~ | ~~1016053-3~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~56~~ | ~~1016053-2~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~2~~ | | ~~55~~ | ~~1016053-1~~ | ~~RESISTOR, FIXED~~ |
| | | | | 5 | | 54 | MS16108-2A | (790112-002) JACK-TEST POINT |
| | | | | ~~1~~ | | ~~53~~ | ~~1016288~~ | ~~SENSOR, IMU~~ |
| | | | | 7 | | 52 | IN649 (1896966-006) | SEMICONDUCTOR MIL-S-19500 |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~51~~ | ~~IN3016B (1896966-063)~~ | ~~SEMICONDUCTOR DEVICE DIODE MIL-S-19500~~ |
| | | | | | | | | |
| SEE NOTE 6 | | | | 1 | | 49 | 1015939-12 | SEMICONDUCTOR DEVICE, DIODE |
| SEE NOTE 6 | | | | 7 | | 48 | 1015967-001 | SEMICONDUCTOR DEVICE, DIODE |
| SEE NOTE 6 | | | | 7 | | 47 | 1016024-001 | RELAY-ARMATURE |
| SEE NOTE 6 | | | | 8 | | 46 | 1015837-001 | RELAY-ARMATURE |

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

| | | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|---|
| SEE NOTE 6 | | | | 1 | | 45 | 1015833-11 | RELAY-THERMAL, TIME DELAY |
| SEE NOTE 6 | | | | 1 | | 44 | 1015914-002 | RELAY-ARMATURE |
| SEE NOTE 6 | | | | 3 | | 43 | 1015832-318 | RELAY |
| SEE NOTE 6 | | | | 1 | | 42 | 1015832-320 | RELAY |
| SEE NOTE 6 | | | | 2 | | 41 | 1015832-312 | RELAY |
| SEE NOTE 6 | | | | 1 | | 40 | 1016047-017 | CAPACITOR |
| SEE NOTE 6 | | | | 1 | | 39 | 1016063 | REACTOR |
| SEE NOTE 6 | | | | 1 | | 38 | 1015998 | AMPLIFIER, MAGNETIC |
| SEE NOTE 6 | | | | 1 | | 37 | 1015839 | AMPLIFIER, MAGNETIC |
| SEE NOTE 6 | | | | 1 | | 36 | 1015840 | AMPLIFIER, MAGNETIC |
| SEE NOTE 6 | | | | 1 | | 35 | 1016103 | TRANSFORMER |
| SEE NOTE 6 | | | | 1 | | 34 | 1015997 | TRANSFORMER, POWER STEP DOWN |
| SEE NOTE 6 | | | | 1 | | 33 | 1016098-8 | FUSEHOLDER |
| SEE NOTE 6 | | | | 1 | | 32 | 1016098-7 | FUSEHOLDER |
| SEE NOTE 6 | | | | 1 | | 31 | 1016098-10 | FUSEHOLDER |
| SEE NOTE 6 | | | | 1 | | 30 | 1016098-9 | FUSEHOLDER |
| SEE NOTE 6 | | | | 1 | | 29 | 1016098-4 | FUSEHOLDER-ILLUMINATED |
| SEE NOTE 6 | | | | 1 | | 28 | 1016098-3 | FUSEHOLDER-ILLUMINATED |
| SEE NOTE 6 | | | | 2 | | 27 | 1016098-5 | FUSEHOLDER-ILLUMINATED |
| SEE NOTE 6 | | | | 3 | | 26 | 1016098-2 | FUSEHOLDER-ILLUMINATED |
| SEE NOTE 6 | | | | 2 | | 25 | 1016098-1 | FUSEHOLDER-ILLUMINATED |
| SEE NOTE 6 | | | | 1 | | 24 | 1015869-154 | LIGHT-INDICATOR |
| SEE NOTE 6 | | | | 1 | | 23 | 1015869-153 | LIGHT-INDICATOR |
| SEE NOTE 6 | | | | 1 | | 22 | 1015869-160 | LIGHT-INDICATOR |
| SEE NOTE 6 | | | | 1 | | 21 | 1015869-350 | LIGHT-INDICATOR SWITCH ASSY |
| SEE NOTE 6 | | | | 1 | | 20 | 1015869-531 | LIGHT-INDICATOR SWITCH ASSY |
| SEE NOTE 6 | | | | 1 | | 19 | 1015869-724 | LIGHT-INDICATOR SWITCH ASSY |
| SEE NOTE 6 | | | | 1 | | 18 | 1015869-720 | LIGHT-INDICATOR SWITCH ASSY |
| SEE NOTE 6 | | | | 1 | | 17 | 1015869-809 | LIGHT-INDICATOR SWITCH ASSY |
| SEE NOTE 6 | | | | 4 | | 16 | 1015974-112 | KNOB |
| SEE NOTE 6 | | | | 1 | | 15 | 1016057-002 | RESISTOR, VARIABLE |
| SEE NOTE 6 | | | | 2 | | 14 | 1016057-001 | RESISTOR, VARIABLE |
| | | | | 3 | | 13 | MS91528-2K2B | KNOB |
| SEE NOTE 6 | | | | 1 | | 12 | 1015825-033 | SWITCH, ROTARY |
| SEE NOTE 6 | | | | 1 | | 11 | 1015859-004 | SWITCH, ROTARY |
| SEE NOTE 6 | | | | 1 | | 10 | 1015859-003 | SWITCH, ROTARY |
| SEE NOTE 6 | | | | 1 | | 9 | 1016080-105 | AMMETER-MICROAMPERES, DC. |
| SEE NOTE 6 | | | | 2 | | 8 | 1016080-505 | AMMETER-MICROAMPERES, DC. |
| SEE NOTE 6 | | | | 1 | | 7 | 1016080-205 | AMMETER-MICROAMPERES, DC. |
| SEE NOTE 6 | | | | 1 | | 6 | 1016038-612 | AMMETER-MICROAMPERES, DC. |
| | | | | 1 | | 5 | 1900772 | FRONT PANEL |
| | | | | 2 | | 4 | 1900015-071 | HANDLE ASSY |
| | | | | 1 | | 3 | 1900942 | TERMINAL BOARD (INSEP ASSY) |
| | | | | 1 | | 2 | 1900941 | TERMINAL BOARD (INSEP ASSY) |
| | | | | 1 | | 1 | 1900769 | CHASSIS (INSEP ASSY) |

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900004-011 | 1900004-011 | |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL --
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Summerville DATE 5 SEP 63
CHECKED Wilson 10 SEP 63
APPROVAL H. Winter
APPROVAL 5/10/64
NASA APPROVAL W. J. Rhine 5/26/64
MIT APPROVAL

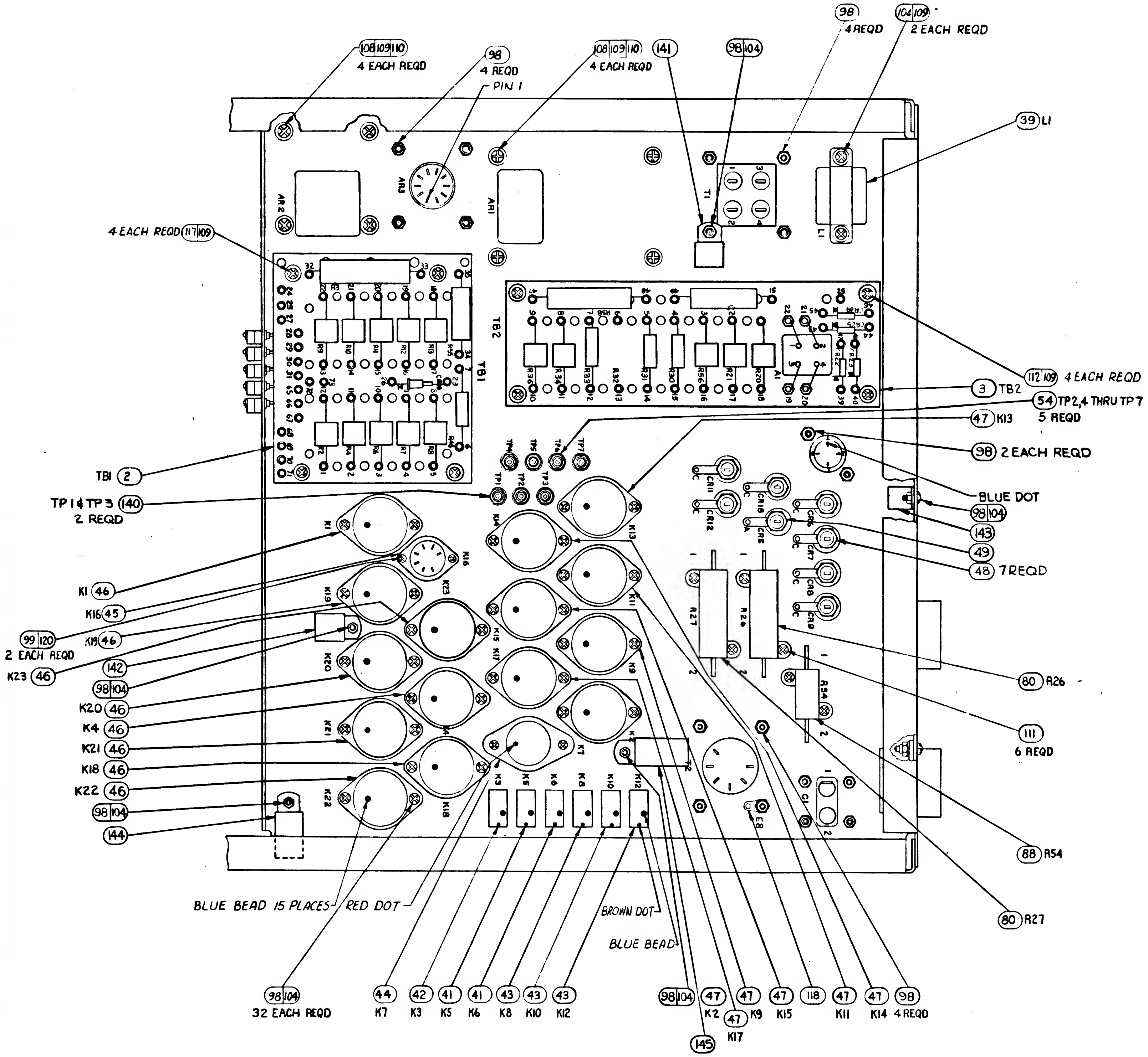
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

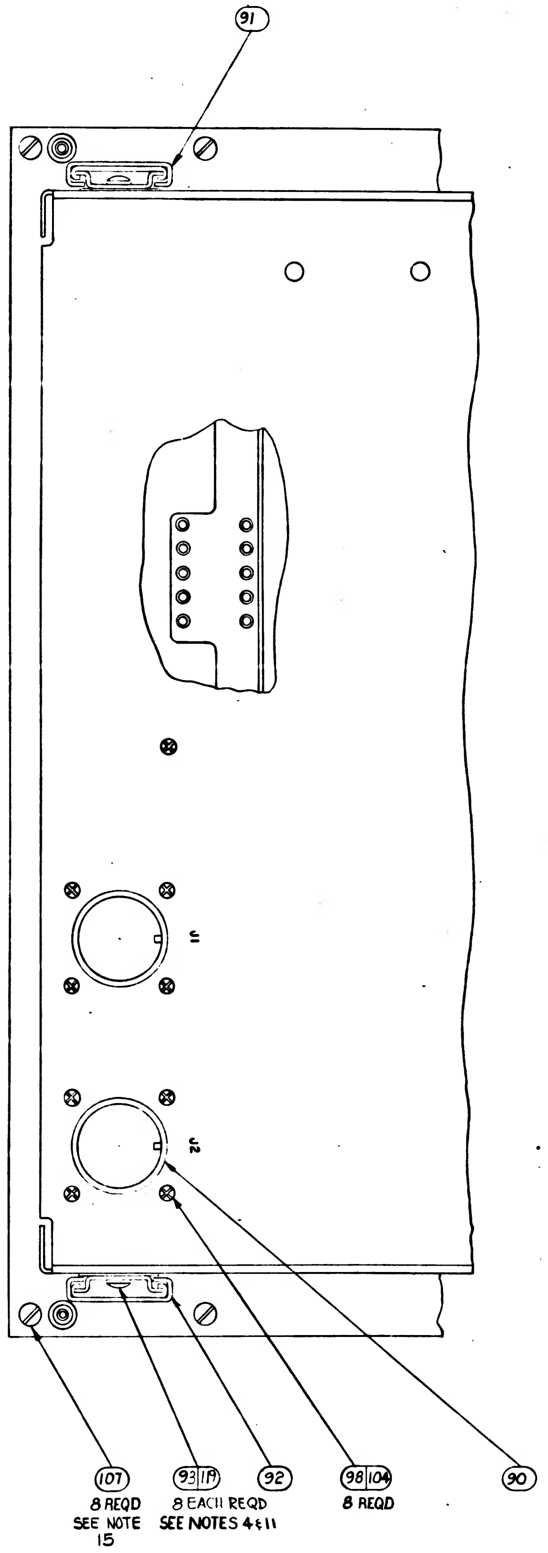
## TEMPERATURE MONITOR AND CONTROL ASSEMBLY

CODE IDENT NO.
SIZE E
1900058
SCALE FULL
SHEET 1 OF 3

1900058 V2-64

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| J | | REPLACES REV."H" WITH CHANGE PER MXC 190314<br>PER TDRR | | 6 NOV 63 | SH<br>EF |
| N | | CHANGE IN ACCORDANCE WITH MXC 191346 | | 23 JAN 64 | RJW |
| P | | CHANGE IN ACCORDANCE WITH MXC 191664 | | 28 JAN 64 | RJW |
| S | E-5 | REM'D 1 QTY (CR13) OF ITEM 48 PER MXC 192015 | | 29 JAN 64 | EF<br>RJW |
| U | F-7<br>E,G-4 | ITEM 109 WAS 8 QTY. REM'D ITEM 116 (6) AN960-C6 & REPLACED WITH ITEM 109 PER MXC 192463 | | 29 JAN 64 | EF<br>RJW |
| W | E-6 | ADDED ITEM 140, REMD 2 QTY OF ITEM 54 (TP1 & TP3) & REPLACED WITH ITEM 140 PER CM 192804 | | 30 JAN 64 | RJW |
| Y | C,D-7<br>C,F-5<br>E-4 | ADDED ITEMS 141 THRU 145, ADDED 4 EACH QTY TO ITEMS 98 & 104 PER CM 192830 | TDRR<br>CBA21 | 31 JAN 64 | RJW |
| AF | — | CHANGE IN ACCORDANCE WITH CM-194150 TDRR CFF26 | — | 24 FEB 64 | EF |
| AL | D-4 | CHANGE IN ACCORDANCE WITH CM-195497 TDRR CFE17 | — | 30 MAR 64 | JWP<br>RP |





Ⓙ REPLACES REV "H" WITH CHANGE

FOR INFORMATION ONLY

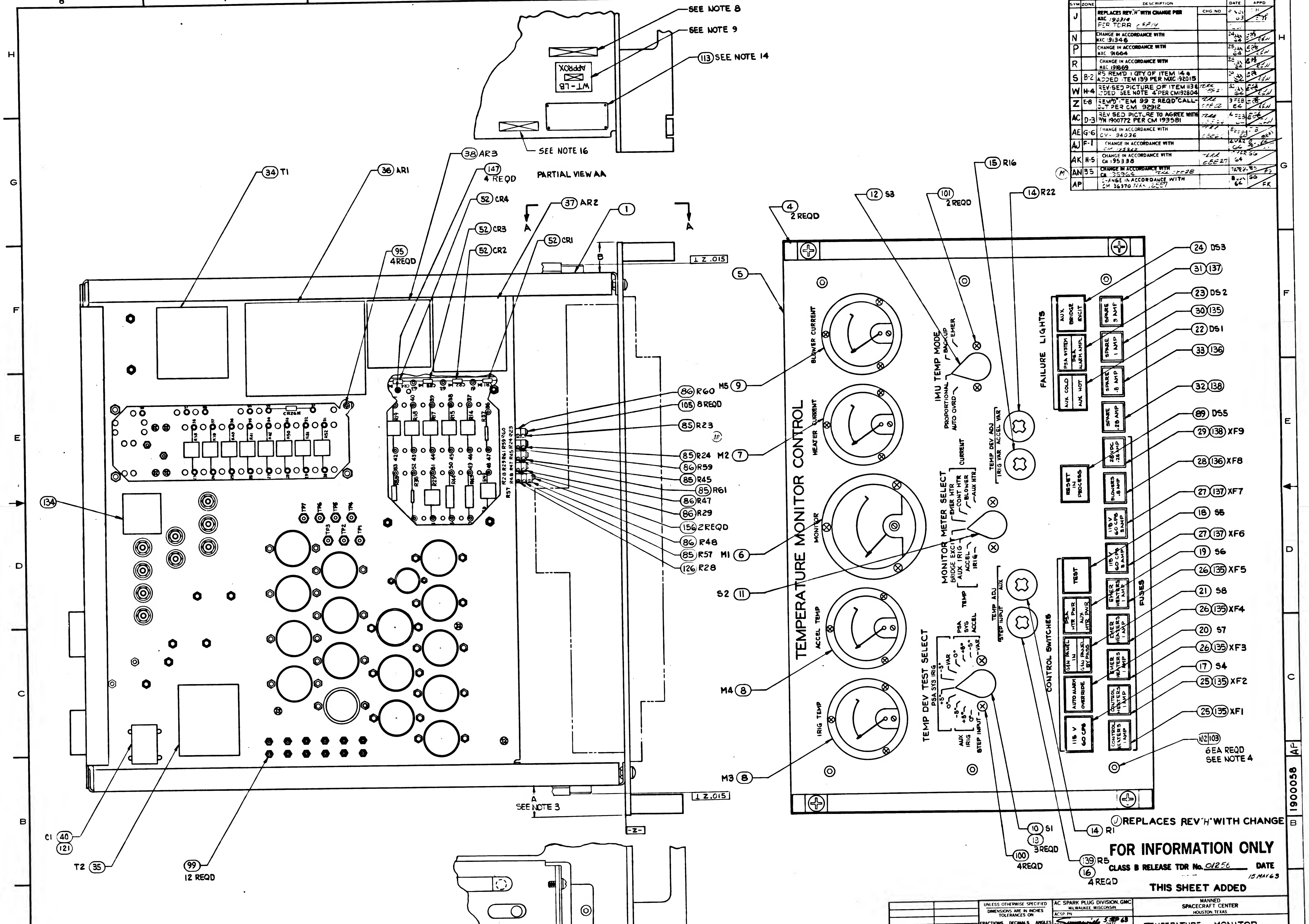
CLASS "B" RELEASE TDR No. C1256 DATE 15 MAY 63

THIS SHEET ADDED

| | | | | | |
|---|---|---|---|---|---|
| 1900004-011 | 1900004-011 | UNLESS OTHERWISE SPECIFIED<br>DIMENSIONS ARE IN INCHES<br>TOLERANCES ON<br>FRACTIONS + — — DECIMALS + — — ANGLES + — —<br>DO NOT SCALE THIS DRAWING | AC SPARK PLUG DIVISION, GMC<br>MILWAUKEE, WISCONSIN<br>ACSP PN | MANNED SPACECRAFT CENTER<br>HOUSTON, TEXAS | |
| NEXT ASSY | USED ON | MATERIAL<br>— | DRAWN D. Dallert DATE 5 SEPT 63<br>CHECKED Wilson 10 SEP 63<br>APPROVAL H Wenter 10 SEP 63<br>APPROVAL 5/22/64 | TEMPERATURE MONITOR<br>AND CONTROL ASSEMBLY | |
| APPLICATION | | CONTRACT NAS 9-497 | NASA APPROVAL W J Kahne 5-26-64<br>MIT APPROVAL | CODE IDENT NO. SIZE E | 1900058 |
| | | | | SCALE 1:1 | SHEET 3 OF 3 |

AL 1900058

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| J | | REPLACES REV."H" WITH CHANGE PER MXC 190314 PER TDRR 58214 | | 63 | |
| N | | CHANGE IN ACCORDANCE WITH MXC 191346 | | 24 JAN 64 | |
| P | | CHANGE IN ACCORDANCE WITH MXC 191664 | | 25 JAN 64 | |
| R | | CHANGE IN ACCORDANCE WITH MXC 191869 | | 64 | |
| S | B-2 | R5 REM'D 1 QTY OF ITEM 14 & ADDED ITEM 139 PER MXC 192015 | | 64 | |
| W | H-4 | REVISED PICTURE OF ITEM 113 & ADDED "SEE NOTE 4" PER CM192804 | TDRR | 30 JAN 64 | |
| Z | E-8 | REM'D ITEM 99 2 REQD CALL-OUT PER CM 192912 | TDRR | 3 FEB 64 | |
| AC | D-3 | REVISED PICTURE TO AGREE WITH P/N 1900772 PER CM 193581 | TDRR | 4 FEB 64 | |
| AE | G-6 | CHANGE IN ACCORDANCE WITH CV-94036 | | 8 FEB 64 | |
| AJ | F-1 | CHANGE IN ACCORDANCE WITH CM 195322 | | 4 MAR 66 | |
| AK | H-5 | CHANGE IN ACCORDANCE WITH CM 195338 | TDRR CEE27 | MAR 64 | |
| AN | B5 | CHANGE IN ACCORDANCE WITH CM 195964 TDRR CEE28 | | 7 APR 64 | |
| AP | | CHANGE IN ACCORDANCE WITH CM 36970 TDRR 2557 | | 8 JUN 64 | FK |



Ⓙ REPLACES REV"H" WITH CHANGE

**FOR INFORMATION ONLY**

**CLASS B RELEASE TDR No.** 01256 **DATE** 15 MAY 63

**THIS SHEET ADDED**

| | | | | |
|---|---|---|---|---|
| 1900004-011 NEXT ASSY | 1900004-011 USED ON | UNLESS OTHERWISE SPECIFIED<br>DIMENSIONS ARE IN INCHES<br>TOLERANCES ON<br>FRACTIONS ± DECIMALS ± ANGLES ±<br>DO NOT SCALE THIS DRAWING | AC SPARK PLUG DIVISION, GMC<br>MILWAUKEE, WISCONSIN<br>ACSP PN<br>DRAWN Summerville DATE 5 SEP 63<br>CHECKED Wilson 10 SEP 63<br>APPROVAL H. Wenton 18 SEP 63<br>APPROVAL 2/20/64 | MANNED SPACECRAFT CENTER<br>HOUSTON, TEXAS<br>TEMPERATURE MONITOR AND CONTROL ASSEMBLY |
| APPLICATION | | MATERIAL —<br>CONTRACT NAS 9-497 | NASA APPROVAL 5-26-64<br>MIT APPROVAL | CODE IDENT NO<br>SIZE E<br>1900058<br>SCALE FULL<br>SHEET 2 OF 3 |

1900058 AP

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. SOLDER PER MIL-S-6872 (ES-2505-1 TYPE 2 FLUX) USING ITEMS 97 AND 106.
3. DIMENSION A MUST BE EQUAL TO DIMENSION E WITHIN .040.
4. DRAWER SLIDE MOUNTING SCREWS AND FRONT PANEL MOUNTING SCREWS SHALL BE SUBJECTED TO TORQUE OF 37-40 LB. IN. AT INSTALLATION.

6. VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING

8. MARK "SCHEM" AND APPLICABLE SCHEMATIC DRAWING NUMBER PER ND 1002019, .12 HIGH COLOR BLACK.
9. MARK WEIGHT OF ASSEMBLY, (50 LBS) PER ND 1002123, ADJACENT TO NAMEPLATE LOCATION.

11. SHIM TO FIT. PEEL OFF EXCESS SHIM STOCK.
12. SECURE ITEM 122 USING ITEM 123.
13. ~~SERIALIZE PER ND 1002023.~~

14. MARK APPLICABLE CONT. NO. AND SERIAL NO. ON ITEM (113) IN ACCORDANCE WITH ND 1002023. LETTERS AND NUMERALS TO BE .06 HIGH.

15. SECURE SCREWS ITEM 107 USING JTEM 148

16. MARK "DWG REV LTR __" AND APPLICABLE DRAWING REVISION LETTER PER ND1002019 .12 HIGH, COLOR BLACK IN LOCATION SHOWN.

TABLE II

| CIRCUIT POINT | | | |
|---|---|---|---|
| FROM | | TO | |
| R23 | YELLOW | TB1 - 29 | |
| | RED | | -29 |
| | GRN | | -30 |
| R24 | YELLOW | | -31 |
| | RED | | -31 |
| | GRN | | -30 |
| R28 | YELLOW | | -67 |
| | RED | | -67 |
| | GRN | | -65 |
| R29 | YELLOW | | -65 |
| | RED | | -65 |
| | GRN | | -66 |
| R45 | YELLOW | | -27 |
| | RED | | -27 |
| | GRN | | -28 |
| R47 | YELLOW | | -23 |
| | RED | | -25 |
| | GRN | | -26 |
| R48 | YELLOW | | -23 |
| | RED | | -24 |
| | GRN | | -26 |
| R59 | YELLOW | | -68 |
| | RED | | -68 |
| | GRN | | -69 |
| R60 | YELLOW | | -70 |
| | RED | | -70 |
| | GRN | | -71 |
| R61 | YELLOW | | -72 |
| | RED | | -72 |
| | GRN | | -73 |

TABLE II

| CIRCUIT POINT | | | |
|---|---|---|---|
| FROM | | TO | |
| R57 | YELLOW | TB1 - 56 | |
| | RED | | -56 |
| | GRN | | -51 |

TABLE I

| ITEM NO. | REF DESIG | CR CATHODE CIRCUIT POINT | CR ANODE CIRCUIT POINT |
|---|---|---|---|
| 52 | CR15 | K12-1 | K12-5 |
| 52 | CR17 | K10-1 | K10-5 |
| 52 | CR19 | K8-1 | K8-5 |
| ~~52~~ | ~~CR20~~ | ~~S8-1~~ | ~~S8-2~~ |

| | QUANTITY REQUIRED | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|---|
| | | | | 2 | | 156 | MS35216-9 | SCREW-MACHINE PAN HD |
| | | | | 1 | | 155 | RE70-G-4020 | (1897094-347) RESISTOR MIL-R-15546/1 |
| SEE NOTE 6 | | | | 1 | | 154 | 1016007-006 | HOLDER-COMPONENT |
| SEE NOTE 6 | | | | 1 | | 153 | 1016007-005 | HOLDER-COMPONENT |
| | | | | 1 | | 152 | 1016341-2 | CAPACITOR |
| | | | | 1 | | 151 | 1016341-1 | CAPACITOR |
| | | | | X | | 150 | PS-1900058 | PROCUREMENT SPECIFICATION |
| | | | | 1 | | 149 | 1900887 | WIRE LIST A-A |
| | | | | AR | | 148 | MIL-S-40083-CL30 | (ES-2544-5) SEALING COMPOUND |
| SEE NOTE 6 | | | | 4 | | 147 | 1015860-005 | SPACER |
| | | | | ~~X~~ | | ~~146~~ | ~~ATP-1900058~~ | ~~ASSEMBLY TEST PROCEDURE~~ |
| | | | | 1 | | 145 | MS21919DG14 | (1897073-114) CLAMP |
| | | | | 1 | | 144 | MS21919DG11 | (1897073-111) CLAMP |
| | | | | 1 | | 143 | MS21919DG9 | (1897073-109) CLAMP |
| | | | | 1 | | 142 | MS21919DG6 | (1897073-106) CLAMP |
| | | | | 1 | | 141 | MS21919DG5 | (1897073-105) CLAMP |
| | | | | 2 | | 140 | MS16108-3A | (7901112-003) JACK-TEST POINT |
| SEE NOTE 6 | | | | 1 | | 139 | 1016057-003 | RESISTOR, VARIABLE |
| | | | | 2 | | 138 | F02A250V1/4AS | (1897099-105) FUSE |
| | | | | 3 | | 137 | F02A250V3AS | (1897099-112) FUSE |
| SEE NOTE 6 | | | | 2 | | 136 | 1016236-1 | FUSE |
| SEE NOTE 6 | | | | 6 | | 135 | 1016236-3 | FUSE |
| SEE NOTE 6 | | | | 1 | | 134 | 1016172 | TRANSFORMER |
| ~~SEE NOTE 6~~ | | | | ~~2~~ | | ~~133~~ | ~~1016168~~ | ~~DIODE~~ |
| ~~SEE NOTE 6~~ | | | | ~~2~~ | | ~~132~~ | ~~1016167~~ | ~~DIODE~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~131~~ | ~~1016054-018~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~130~~ | ~~1016052-2~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~2~~ | | ~~129~~ | ~~1016054-017~~ | ~~RESISTOR, FIXED~~ |
| | | | | ~~1~~ | | ~~128~~ | ~~RN65B2491F~~ | ~~(1896975-327) RESISTOR, FIXED~~ |
| | | | | ~~1~~ | | ~~127~~ | ~~RN65B1501F~~ | ~~(1896975-306) RESISTOR, FIXED~~ |
| SEE NOTE 6 | | | | 1 | | 126 | 1015989-009 | RESISTOR, VARIABLE |
| | | | | 1 | | 125 | 1900705 | NAMEPLATE, APOLLO, GEN |
| | | | | 4 | | 124 | AN535-00-4 | SCREW, DRIVE, ROUNDHEAD |
| | | | | AR | | 123 | MIL-S-40083 (ORD) CLASS 20 | SEALING AND RETAINING COMPOUND (ES-2544-3) |
| | | | | ~~4~~ | | ~~122~~ | ~~MS35216-12~~ | ~~SCREW-MACHINE, PAN HD~~ |
| SEE NOTE 6 | | | | 1 | | 121 | 1016125-1 | BRACKET, MOUNTING |
| | | | | 6 | | 120 | MS35216-13 | SCREW-MACHINE, PAN HD |
| SEE NOTE 6 | | | | 8 | | 119 | 1016005-1 | SHIM, SLIDE LOCATING |
| | | | | 1 | | 118 | MS35431-3 | TERMINAL LUG |
| | | | | 4 | | 117 | MS35216-33 | SCREW, PAN HD. |
| | | | | ~~6~~ | | ~~116~~ | ~~AN960-C6~~ | ~~WASHER, FLAT~~ |
| | | | | X | | 115 | | WIRING DIAGRAM |
| | | | | X | | 114 | 1900905 | SCHEMATIC DIAGRAM |
| | | | | 1 | | 113 | 1901304-102 | NAMEPLATE |
| | | | | 4 | | 112 | MS35216-30 | SCREW-MACHINE PAN HEAD |
| | | | | 8 | | 111 | MS35216-14 | SCREW-MACHINE PAN HEAD |
| | | | | 8 | | 110 | MS35338-79 | WASHER, LOCK, SPLIT |
| | | | | 18 | | 109 | AN960C6 (1897006-026) | WASHER-FLAT |
| | | | | 8 | | 108 | MS35216-24 | SCREW-MACHINE PAN HEAD |
| SEE NOTE 6 | | | | 8 | | 107 | AN507C832R12 | (1897003-568) SCREW, MACHINE FLAT HEAD |
| | | | | AR | | 106 | MIL-F-14256<br>QQ-S-571 | FLUX (ES-2798)<br>FLUX TYPE AR (ES-2175 TYPE 1 OR 2) |
| | | | | 8 | | 105 | MS35216-8 | SCREW-MACHINE PAN HEAD |
| | | | | 46 | | 104 | MS35216-27 | SCREW-MACHINE PAN HEAD |
| | | | | 6 | | 103 | AN363C1032 (1896990-011) | NUT-SELF LOCKING |
| SEE NOTE 6 | | | | 6 | | 102 | 1006783-45 | SCREW-BUTTON HEAD |
| | | | | 2 | | 101 | AN507C632R6 (1897003-534) | SCREW-FLAT HEAD |
| | | | | 4 | | 100 | AN507C832R6 (1897003-564) | SCREW-FLAT HEAD |
| SEE NOTE 6 | | | | 20 | | 99 | 1016151-004 | NUT-SELF LOCKING |
| | | | | 58 | | 98 | AN363C632 (1896990-261) | NUT-SELF LOCKING |
| | | | | AR | | 97 | QQ-S-571 | SOLDER SN 60 (ES-2175 ALLOY) |
| ~~SEE NOTE 6~~ | | | | ~~4~~ | | ~~96~~ | ~~1015860-008~~ | ~~SPACER~~ |
| SEE NOTE 6 | | | | 4 | | 95 | 1015860-003 | SPACER |
| | | | | ~~4~~ | | ~~94~~ | ~~SE20XD02 (1896962-004)~~ | ~~TERMINAL MIL-T-55155~~ |
| SEE NOTE 6 | | | | 8 | | 93 | 1006783-44 | SCREW-BUTTON HEAD |
| SEE NOTE 6 | | | | 1 | | 92 | 1015785-010 | SLIDE ASSY L.H. |
| SEE NOTE 6 | | | | 1 | | 91 | 1015785-009 | SLIDE ASSY R.H. |

LIST OF PARTS AND MATERIALS

| | QUANTITY REQUIRED | | | 011 | EFFECTIVITY | ITEM NO | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|---|
| | | | | 1 | | 90 | 1900148 | WIRING HARNESS A |
| SEE NOTE 6 | | | | 1 | | 89 | 1015869-155 | LIGHT INDICATOR |
| | | | | 1 | | 88 | RE70-G-69R8 (1897094-274) | RESISTOR MIL-R-18546 |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~87~~ | ~~1015978-448~~ | ~~RESISTOR, FIXED~~ |
| SEE NOTE 6 | | | | 5 | | 86 | 1015989-004 | RESISTOR-VARIABLE |
| SEE NOTE 6 | | | | 5 | | 85 | 1015989-007 | RESISTOR-VARIABLE |
| | | | | ~~1~~ | | ~~84~~ | ~~RN65D1001F (1896975-280)~~ | ~~RESISTOR, FIXED MIL-R-10509/2~~ |
| | | | | ~~2~~ | | ~~83~~ | ~~RN65B1003 F (1896975-481)~~ | ~~RESISTOR, FIXED MIL-R-10509/2~~ |
| ~~SEE NOTE 6~~ | | | | ~~2~~ | | ~~82~~ | ~~1016056-001~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~81~~ | ~~(1896975-297)RN75C1211F~~ | ~~RESISTOR, FIXED~~ |
| SEE NOTE 6 | | | | 2 | | 80 | 1016055-001 | RESISTOR, FIXED |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~79~~ | ~~1016054-16~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~78~~ | ~~1016054-15~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~77~~ | ~~1016054-14~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~4~~ | | ~~76~~ | ~~1016054-13~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~75~~ | ~~1016054-12~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~2~~ | | ~~74~~ | ~~1016054-11~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~73~~ | ~~1016054-10~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~72~~ | ~~1016054-9~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~71~~ | ~~1016054-8~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~70~~ | ~~1016054-7~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~69~~ | ~~1016054-6~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~68~~ | ~~1016054-1~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~67~~ | ~~1016052-1~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~66~~ | ~~1016053-12~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~65~~ | ~~1016053-11~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~64~~ | ~~1016053-10~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~63~~ | ~~1016053-9~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~62~~ | ~~1016053-8~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~61~~ | ~~1016053-7~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~60~~ | ~~1016053-6~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~59~~ | ~~1016053-5~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~58~~ | ~~1016053-4~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~57~~ | ~~1016053-3~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~56~~ | ~~1016053-2~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | | | | ~~2~~ | | ~~55~~ | ~~1016053-1~~ | ~~RESISTOR, FIXED~~ |
| | | | | 5 | | 54 | MS16108-2A | (7901112-002) JACK-TEST POINT |
| | | | | ~~1~~ | | ~~53~~ | ~~1016288~~ | ~~SENSOR, IMU~~ |
| | | | | 7 | | 52 | IN649 (1896966-006) | SEMICONDUCTOR MIL-S-19500 |
| ~~SEE NOTE 6~~ | | | | ~~1~~ | | ~~51~~ | ~~IN3016B(1896966-063)~~ | ~~SEMICONDUCTOR DEVICE DIODE MIL-S-19500~~ |
| | | | | | | | | |
| SEE NOTE 6 | | | | 1 | | 49 | 1015939-12 | SEMICONDUCTOR DEVICE, DIODE |
| SEE NOTE 6 | | | | 7 | | 48 | 1015967-001 | SEMICONDUCTOR DEVICE, DIODE |
| SEE NOTE 6 | | | | 7 | | 47 | 1016024-001 | RELAY-ARMATURE |
| SEE NOTE 6 | | | | 8 | | 46 | 1015837-001 | RELAY-ARMATURE |

LIST OF PARTS AND MATERIALS

| | QUANTITY REQUIRED | | | 011 | EFFECTIVITY | ITEM NO | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|---|
| SEE NOTE 6 | | | | 1 | | 45 | 1015833-11 | RELAY-THERMAL, TIME DELAY |
| SEE NOTE 6 | | | | 1 | | 44 | 1015914-002 | RELAY-ARMATURE |
| SEE NOTE 6 | | | | 3 | | 43 | 1015832-318 | RELAY |
| SEE NOTE 6 | | | | 1 | | 42 | 1015832-320 | RELAY |
| SEE NOTE 6 | | | | 2 | | 41 | 1015832-312 | RELAY |
| SEE NOTE 6 | | | | 1 | | 40 | 1016047-017 | CAPACITOR |
| SEE NOTE 6 | | | | 1 | | 39 | 1016063 | REACTOR |
| SEE NOTE 6 | | | | 1 | | 38 | 1015998 | AMPLIFIER, MAGNETIC |
| SEE NOTE 6 | | | | 1 | | 37 | 1015839 | AMPLIFIER, MAGNETIC |
| SEE NOTE 6 | | | | 1 | | 36 | 1015840 | AMPLIFIER, MAGNETIC |
| SEE NOTE 6 | | | | 1 | | 35 | 1016103 | TRANSFORMER |
| SEE NOTE 6 | | | | 1 | | 34 | 1015997 | TRANSFORMER, POWER STEP DOWN |
| SEE NOTE 6 | | | | 1 | | 33 | 1016098-8 | FUSEHOLDER |
| SEE NOTE 6 | | | | 1 | | 32 | 1016098-7 | FUSEHOLDER |
| SEE NOTE 6 | | | | 1 | | 31 | 1016098-10 | FUSEHOLDER |
| SEE NOTE 6 | | | | 1 | | 30 | 1016098-9 | FUSEHOLDER |
| SEE NOTE 6 | | | | 1 | | 29 | 1016098-4 | FUSEHOLDER-ILLUMINATED |
| SEE NOTE 6 | | | | 1 | | 28 | 1016098-3 | FUSEHOLDER-ILLUMINATED |
| SEE NOTE 6 | | | | 2 | | 27 | 1016098-5 | FUSEHOLDER-ILLUMINATED |
| SEE NOTE 6 | | | | 3 | | 26 | 1016098-2 | FUSEHOLDER-ILLUMINATED |
| SEE NOTE 6 | | | | 2 | | 25 | 1016098-1 | FUSEHOLDER-ILLUMINATED |
| SEE NOTE 6 | | | | 1 | | 24 | 1015869-154 | LIGHT-INDICATOR |
| SEE NOTE 6 | | | | 1 | | 23 | 1015869-153 | LIGHT-INDICATOR |
| SEE NOTE 6 | | | | 1 | | 22 | 1015869-160 | LIGHT-INDICATOR |
| SEE NOTE 6 | | | | 1 | | 21 | 1015869-350 | LIGHT-INDICATOR SWITCH ASSY |
| SEE NOTE 6 | | | | 1 | | 20 | 1015869-531 | LIGHT-INDICATOR SWITCH ASSY |
| SEE NOTE 6 | | | | 1 | | 19 | 1015869-724 | LIGHT-INDICATOR SWITCH ASSY |
| SEE NOTE 6 | | | | 1 | | 18 | 1015869-720 | LIGHT-INDICATOR SWITCH ASSY |
| SEE NOTE 6 | | | | 1 | | 17 | 1015869-809 | LIGHT-INDICATOR SWITCH ASSY |
| SEE NOTE 6 | | | | 4 | | 16 | 1015974-112 | KNOB |
| SEE NOTE 6 | | | | 1 | | 15 | 1016057-002 | RESISTOR, VARIABLE |
| SEE NOTE 6 | | | | 2 | | 14 | 1016057-001 | RESISTOR, VARIABLE |
| | | | | 3 | | 13 | MS91528-2K28 | KNOB |
| SEE NOTE 6 | | | | 1 | | 12 | 1015825-033 | SWITCH, ROTARY |
| SEE NOTE 6 | | | | 1 | | 11 | 1015859-004 | SWITCH, ROTARY |
| SEE NOTE 6 | | | | 1 | | 10 | 1015859-003 | SWITCH, ROTARY |
| SEE NOTE 6 | | | | 1 | | 9 | 1016080-105 | AMMETER-MICROAMPERES, DC. |
| SEE NOTE 6 | | | | 2 | | 8 | 1016080-505 | AMMETER-MICROAMPERES, DC. |
| SEE NOTE 6 | | | | 1 | | 7 | 1016080-205 | AMMETER-MICROAMPERES, DC. |
| SEE NOTE 6 | | | | 1 | | 6 | 1016038-612 | AMMETER-MICROAMPERES, DC. |
| | | | | 1 | | 5 | 1900772 | FRONT PANEL |
| | | | | 2 | | 4 | 1900015-071 | HANDLE ASSY |
| | | | | 1 | | 3 | 1900942 | TERMINAL BOARD (INSEP ASSY) |
| | | | | 1 | | 2 | 1900941 | TERMINAL BOARD (INSEP ASSY) |
| | | | | 1 | | 1 | 1900769 | CHASSIS (INSEP ASSY) |

LIST OF PARTS AND MATERIALS

REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
|---|---|---|---|---|---|
| J | | REPLACES REV. "H" WITH CHANGE PER MXC 190314<br>PER TDRR [illegible] | | 7 NOV 63<br>5-24 | SH EH |
| K | | ITEM 81 P/N WAS 1016051-163 PER MXC 190603 TDRR 08820 | | 13 JAN 64 | E.M. |
| L | | ADDED ITEMS 124 & 125 PER MXC 190927 | | 13 JAN 64 | E.M. |
| M | | ITEM 6 P/N WAS 1016038-512 PER MXC 191048 | | 13 JAN 64 | E.M. |
| N | | CHANGE IN ACCORDANCE WITH MXC 191346 | | 24 JAN 64 | EJH RJW |
| P | | ITEM 2 WAS 1900770, ITEM 3 WAS 1900771, ITEM 121 ADDED -1 AFTER P/N 1016125 PER MXC 191664 | | 28 JAN 64 | EJH RJW |
| R | | REVISION STATUS CHANGED PER MXC 191869 | | 28 JAN 64 | EJH RJW |
| S | | REVISION STATUS CHANGED PER MXC 192015 | | 29 JAN 64 | EJH RJW |
| T | | ITEM 12 WAS 1015825-14 PER MXC 192462 | | 29 JAN 64 | EJH RJW |
| U | | ITEM 104, 105 & 117 WAS MS35216-3, -25 & -34 RESP. PER MXC 192463 | | 29 JAN 64 | EJH RJW |
| V | | ADDED TABLE II PER CM 192732 | | 30 JAN 64 | EJH RJW |
| W | | ADDED NOTE 14, ITEM 54 WAS (7) MS16108-1A & ADDED P/N 7901112-002 TO DESCR, ADDED P/N TO ITEM 113 PER CM192804 | | 30 JAN 64 | EJH RJW |
| Y | | REVISION STATUS CHANGED PER 192830 TDRR 08821 | | 31 JAN 64 | EJH RJW |
| Z | | ITEM 99 WAS (16)1010617-4 PER CM 192912 | | 3 FEB 64 | EJH RJW |
| AA | | ISSUE IN ERROR VOID. PER CM 193196 TDRR 08822 | | 4 FEB 64 | EJH RJW |
| AB | | ADDED ITEM 146 & ASSOC INFO PER CM193216 TDRR 08823 | | 4 FEB 64 | EJH RJW |
| AC | | REVISION STATUS CHANGED PER 193581 TDRR 08824 | | 4 FEB 64 | EJH RJW |
| AD | | ADDED P/N 1900905 TO ITEM 114 PER CM193807 TDRR 08825 | | 4 FEB 64 | EJH RJW |
| AE | | CHANGE IN ACCORDANCE WITH CM-194036 | | 18 FEB 64 | J.B. |
| AF | – | CHANGE IN ACCORDANCE WITH CM-194150 TDRR 08826 | – | 24 FEB 64 | |
| AG | | CHANGE IN ACCORDANCE WITH CM 194592 | – | 3 MAR 64 | JJJ |
| AH | | CHANGE IN ACCORDANCE WITH CM 195034 | | 4 MAR 64 | JJJ W.D. |
| AJ | | CHANGE IN ACCORDANCE WITH CM 195222 | | 6 MAR 64 | W.D. |
| AK | F8 | CHANGE IN ACCORDANCE WITH CM CM195338 | | 17 MAR 64 | GG |
| AL | B-5 | CHANGE IN ACCORDANCE WITH CM 195497 | | 30 MAR 64 | JWP |
| AM | E-7 | CHANGE IN ACCORDANCE WITH CM 195828 TDRR 08827 | | 8 APR 64 | JWP |
| Ⓜ AN | G8 | CHANGE IN ACCORDANCE WITH CM 195964 TDRR 08828 | | 17 APR 64 | |
| Ⓝ AP | | CHANGE IN ACCORDANCE WITH CM196970 TDRR 12557 | | 5 JUN 64 | GG FK |
| AR | B8 | CHANGE IN ACCORDANCE WITH TDRR 14178 | | 19 NOV 64 | RS EF |

| SHEET 1 | SHEET 2 | SHEET 3 |
|---|---|---|
| AR | AP | AR |
| AP | AP | AP |
| AN | AN | AL |
| AM | AK | AL |
| AL | AK | AL |
| AK | AK | AF |
| AJ | AJ | AF |
| AH | AE | AF |
| AG | AE | AF |
| AF | AE | AF |
| AE | AE | Y |
| AD | AC | Y |
| AC | AC | Y |
| AB | Z | Y |
| AA | Z | Y |
| Z | Z | Y |
| Y | W | Y |
| W | W | W |
| V | S | U |
| U | S | U |
| T | S | S |
| S | S | S |
| R | R | P |
| P | P | P |
| N | N | N |
| M | J | J |
| L | J | J |
| K | J | J |
| J | J | J |

REVISION STATUS OF SHEETS

Ⓙ REPLACES REV "H" WITH CHANGE

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01256 DATE 13 MAY 65

| NEXT ASSY | USED ON | APPLICABLE DASH NO |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| 1900004-011 | 1900004-011 | |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − − | DECIMALS + − − | ANGLES + − −
DO NOT SCALE THIS DRAWING
MATERIAL –
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 5 SEP 63
CHECKED 10 SEP 63
APPROVAL
APPROVAL 5/11/64
NASA APPROVAL 5-26-64
MIT APPROVAL

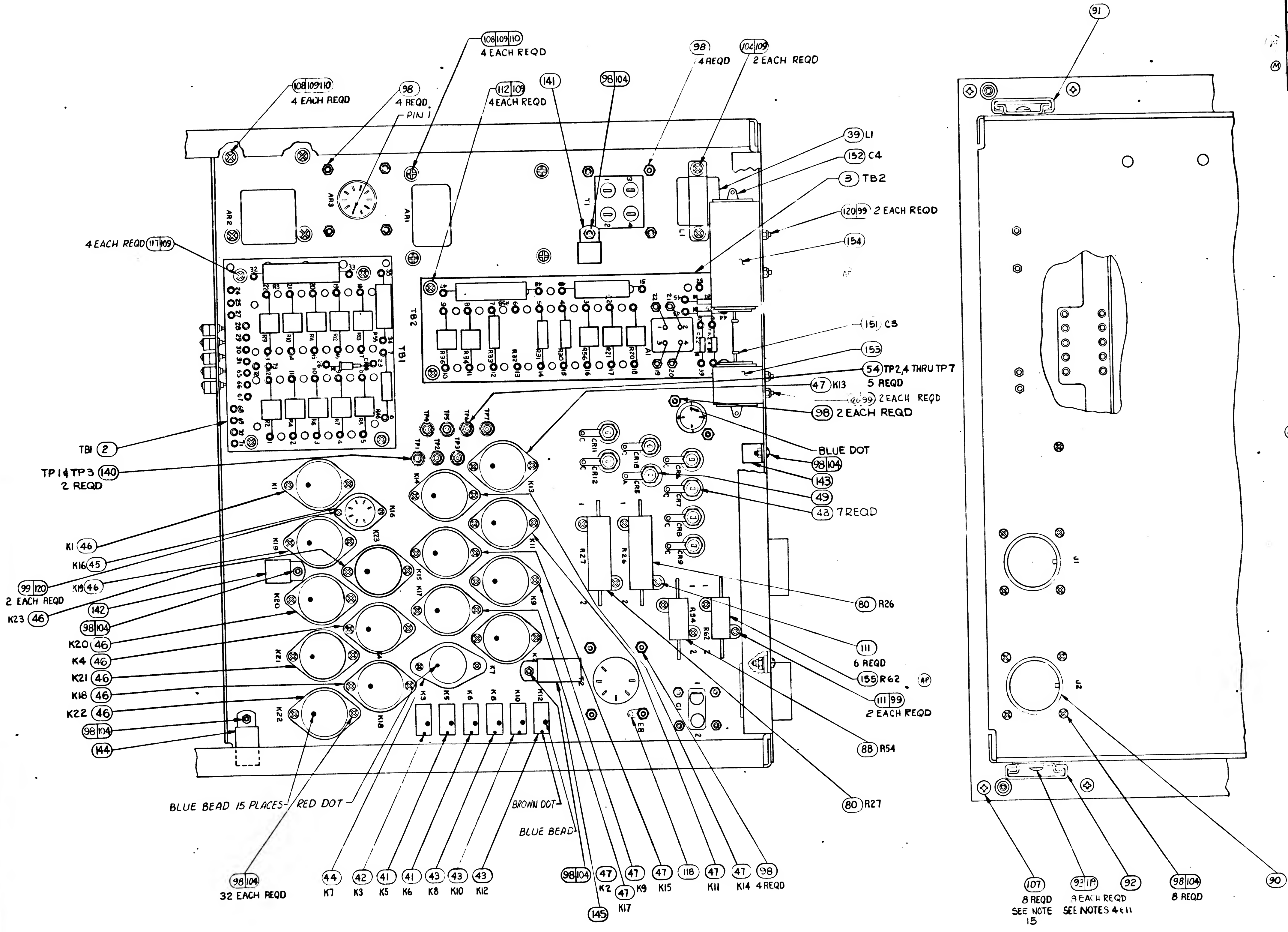
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

TEMPERATURE MONITOR AND CONTROL ASSEMBLY

CODE IDENT NO. | SIZE E | 1900058
SCALE FULL | SHEET 1 OF 3

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| J | | REPLACES REV.'H' WITH CHANGE PER MXC 190314<br>PER TDRR | | 6 NOV 63 | SH EJB |
| N | | CHANGE IN ACCORDANCE WITH MXC 191346 | | 23 JAN 64 | EJB RJW |
| P | | CHANGE IN ACCORDANCE WITH MXC 191664 | | 28 JAN 64 | EJB RJW |
| S | E-5 | REM'D 1 QTY (CR13) OF ITEM 48 PER MXC 192015 | | 29 JAN 64 | EJB RJW |
| U | F-7<br>E,G-4 | ITEM 109 WAS 8 QTY. REM'D ITEM 116 (6) AN960-C6 & REPLACED WITH ITEM 109 PER MXC 192463 | | 29 JAN 64 | EJB RJW |
| W | E-6 | ADDED ITEM 140, REMD 2 QTY OF ITEM 54 (TP1 & TP3) & REPLACED WITH ITEM 140 PER CM 192804 | | 30 JAN 64 | EJB RJW |
| Y | C,D-7<br>C,F-5<br>E-4 | ADDED ITEMS 141 THRU 145, ADDED 4 EACH QTY TO ITEMS 98 & 104 PER CM 192830 | TDRR EE | 31 JAN 64 | EJB RJW |
| AF | — | CHANGE IN ACCORDANCE WITH CM-194150 TDRR EE26 | — | 24 FEB 64 | MS EF |
| AL | D-4 | CHANGE IN ACCORDANCE WITH CM-195497 TDRR FE27 | — | 30 MAR 64 | JWP RP |
| AP | | CHANGE IN ACCORDANCE WITH CM196970 TDRR 2257 | | 10 JUN 64 | GG FK |
| AR | | CHANGE IN ACCORDANCE WITH TDRR 14178 | | 19 NOV 64 | RS EF |

Ⓜ



Ⓙ REPLACES REV 'H' WITH CHANGE

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01256 DATE 15 MAY 63

**THIS SHEET ADDED**

| | |
|---|---|
| 1900004-011 | 1900004-011 |
| NEXT ASSY | USED ON |
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — − DECIMALS + — − ANGLES + — −
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE WISCONSIN
ACSP PN
DRAWN D. Pollert DATE 5 SEPT 63
CHECKED 12 SEP 63
APPROVAL 13 SEP 63
APPROVAL
NASA APPROVAL 5-26-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

TEMPERATURE MONITOR
AND CONTROL ASSEMBLY

CODE IDENT NO
SIZE E
1900058
SCALE 1:1
SHEET 3 OF 3

1900058 AR

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. SOLDER PER MIL-S-6872 (ES-2505-1 TYPE 2 FLUX) USING ITEMS 97 AND 106.
3. DIMENSION A MUST BE EQUAL TO DIMENSION B WITHIN .040.
4. DRAWER SLIDE MOUNTING SCREWS AND FRONT PANEL MOUNTING SCREWS SHALL BE SUBJECTED TO TORQUE OF 37-40 LB. IN. AT INSTALLATION.
6. VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING
8. MARK "SCHEM" AND APPLICABLE SCHEMATIC DRAWING NUMBER PER ND 1002019, .12 HIGH COLOR BLACK.
9. MARK WEIGHT OF ASSEMBLY, (50 LBS) PER ND1002123, ADJACENT TO NAMEPLATE LOCATION.
11. SHIM TO FIT. PEEL OFF EXCESS SHIM STOCK.
12. SECURE ITEM 122 USING ITEM 123.
13. ~~SERIALIZE PER ND 1002023.~~
14. MARK APPLICABLE CONT. NO. AND SERIAL NO. ON ITEM (113) IN ACCORDANCE WITH ND 1002023. LETTERS AND NUMERALS TO BE .06 HIGH.
15. SECURE SCREWS ITEM 107 USING ITEM 148
16. MARK "DWG REV LTR ——" AND APPLICABLE DRAWING REVISION LETTER PER ND1002019 .12 HIGH, COLOR BLACK IN LOCATION SHOWN.

TABLE II

| CIRCUIT POINT | |
|---|---|
| FROM | TO |
| R23 YELLOW | TB1-29 |
| RED | -29 |
| GRN | -30 |
| R24 YELLOW | -31 |
| RED | -31 |
| GRN | -30 |
| R28 YELLOW | -67 |
| RED | -67 |
| GRN | -65 |
| R29 YELLOW | -65 |
| RED | -65 |
| GRN | -66 |
| R45 YELLOW | -27 |
| RED | -27 |
| GRN | -28 |
| R47 YELLOW | -23 |
| RED | -25 |
| GRN | -26 |
| R48 YELLOW | -23 |
| RED | -24 |
| GRN | -26 |
| R59 YELLOW | -68 |
| RED | -68 |
| GRN | -69 |
| R60 YELLOW | -70 |
| RED | -70 |
| GRN | -71 |
| R61 YELLOW | -72 |
| RED | -72 |
| GRN | -73 |

TABLE II

| CIRCUIT POINT | |
|---|---|
| FROM | TO |
| R57 YELLOW | TB1-56 |
| RED | -56 |
| GRN | -51 |

TABLE I

| ITEM NO. | REF DESIG | CR CATHODE CIRCUIT POINT | CR ANODE CIRCUIT POINT |
|---|---|---|---|
| 52 | CR15 | K12-1 | K12-5 |
| 52 | CR17 | K10-1 | K10-5 |
| 52 | CR19 | K8-1 | K8-5 |
| ~~52~~ | ~~CR20~~ | ~~S8-1~~ | ~~S8-2~~ |

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
|---|---|---|---|---|---|
| J | | REPLACES REV. "H" WITH CHANGE PER MXC 90314 PER TDRR 08814 | | | SH EH |
| K | | ITEM 81 P/N WAS 1016051-163 PER MXC 190603 TDRR 08820 | | 64 | E.M. |
| L | | ADDED ITEMS 124 & 125 PER MXC 190927 | | | EM |
| M | | ITEM 6 P/N WAS 1016038-512 PER MXC 191048 | | | EM |
| N | | CHANGE IN ACCORDANCE WITH MXC 191346 | | 64 | |
| P | | ITEM 2 WAS 1900770, ITEM 3 WAS 1900771, ITEM 121 ADDED -1 AFTER 1016125 PER MXC 191664 | | 64 | |
| R | | REVISION STATUS CHANGED PER MXC 191869 | | | |
| S | | REVISION STATUS CHANGED PER MXC 192015 | | 3 JAN | |
| T | | ITEM 12 WAS 1015825-14 PER MXC 192462 | | JAN 64 | |
| U | | ITEM 104, 105 & 117 WAS MS35216-25 & -34 RESP. PER MXC 192463 | | 3 JAN 64 | |
| V | | ADDED TABLE II PER MXC 192732 | | 30 JAN 64 | |
| W | | ADDED NOTE 14, ITEM 54 WAS (7) MS16108-1A & ADDED P/N 7901112-002, ADDED P/N TO ITEM 113 PER CM192864 | | 30 JA 64 | |
| Y | | REVISION STATUS CHANGED PER 192830 TDRR 08821 | | 31 JA 64 | |
| Z | | ITEM 99 WAS (16)1010617-4 PER CM 192912 | | 3 FEB 64 | |
| AA | | ISSUE IN ERROR VOID. PER CM 193196 TDRR 08822 | | 4 FEB 64 | |
| AB | | ADDED ITEM 146 & ASSOC INFO PER CM193216 TDRR 08823 | | 4 FEB 64 | |
| AC | | REVISION STATUS CHANGED PER 193581 TDRR 08824 | | 4 FEB 64 | |
| AD | | ADDED P/N 1900905 TO ITEM 114 PER CM 193807 TDRR 08825 | | 4 64 | |
| AE | | CHANGE IN ACCORDANCE WITH CM-194036 | | 18 FEB 64 | J B |
| AF | – | CHANGE IN ACCORDANCE WITH CM-194150 TDRR 08826 | – | 24 FEB 64 | |
| AG | | CHANGE IN ACCORDANCE WITH CM-194592 | – | 3 MAR 64 | |
| AH | | CHANGE IN ACCORDANCE WITH CM 195034 | | 4 MAR 64 | |
| AJ | | CHANGE IN ACCORDANCE WITH CM 195222 | | 6 MAR 64 | |
| AK | F8 | CHANGE IN ACCORDANCE WITH CM CM195338 | | 17 MAR 64 | GG |
| AL | B-5 | CHANGE IN ACCORDANCE WITH CM 195497 | | 30 MAR 64 | JWP |
| AM | E-7 | CHANGE IN ACCORDANCE WITH CM 195828 TDRR 08827 | | 8 APR 64 | JWP |
| Ⓜ AN | G8 | CHANGE IN ACCORDANCE WITH CM 195964 TDRR 08828 | | 17 APR 64 | |
| Ⓜ AP | | CHANGE IN ACCORDANCE WITH CM196970 TDRR 12557 | | 5 JUN 64 | GG FK |
| AR | B8 | CHANGE IN ACCORDANCE WITH TDRR 14178 | | 19 NOV 64 | RS EF |
| AS | C7 | CHANGE IN ACCORDANCE WITH TDRR 14179 | | 20 NOV 64 | EF |

Ⓙ REPLACES REV "H" WITH CHANGE

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01256 DATE 15 MAY 63

| | | |
|---|---|---|
| AS | AP | AR |
| AR | AP | AR |
| AP | AP | AP |
| AN | AN | AL |
| AM | AK | AL |
| AL | AK | AL |
| AK | AK | AF |
| AJ | AJ | AF |
| AH | AE | AF |
| AG | AE | AF |
| AF | AE | AF |
| AE | AE | Y |
| AD | AC | Y |
| AC | AC | Y |
| AB | Z | Y |
| AA | Z | Y |
| Z | Z | Y |
| Y | W | Y |
| W | W | W |
| V | S | U |
| U | S | U |
| T | S | S |
| S | S | S |
| R | R | P |
| P | P | P |
| N | N | N |
| M | J | J |
| L | J | J |
| K | J | J |
| J | J | J |
| SHEET 1 | SHEET 2 | SHEET 3 |

REVISION STATUS OF SHEETS

| | QUANTITY REQUIRED 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|
| | 2 | | 156 | MS35216-9 | SCREW-MACHINE PAN HD |
| | 1 | | 155 | RE70-G-4020 (1897094-347) | RESISTOR MIL-R-15546/1 |
| SEE NOTE 6 | 1 | | 154 | 1016007-006 | HOLDER-COMPONENT |
| SEE NOTE 6 | 1 | | 153 | 1016007-005 | HOLDER-COMPONENT |
| | 1 | | 152 | 1016341-2 | CAPACITOR |
| | 1 | | 151 | 1016341-1 | CAPACITOR |
| | X | | 150 | PS-1900058 | PROCUREMENT SPECIFICATION |
| | 1 | | 149 | 1900887 | WIRE LIST A-A |
| | AR | | 148 | MIL-S-40083-CL30 | (ES-2544-5) SEALING COMPOUND |
| SEE NOTE 6 | 4 | | 147 | 1015860-005 | SPACER |
| | ~~X~~ | | ~~146~~ | ~~ATP-1900058~~ | ~~ASSEMBLY TEST PROCEDURE~~ |
| | 1 | | 145 | MS21919DG14 | (1897073-114) CLAMP |
| | 1 | | 144 | MS21919DG11 | (1897073-111) CLAMP |
| | 1 | | 143 | MS21919DG9 | (1897073-109) CLAMP |
| | 1 | | 142 | MS21919DG6 | (1897073-106) CLAMP |
| | 1 | | 141 | MS21919DG5 | (1897073-105) CLAMP |
| | 2 | | 140 | MS16108-3A | (7901112-003) JACK-TEST POINT |
| SEE NOTE 6 | 1 | | 139 | 1016057-003 | RESISTOR, VARIABLE |
| | 2 | | 138 | F02A250V1/4AS | (1897099-105) FUSE |
| | 3 | | 137 | F02A250V3AS | (1897099-112) FUSE |
| SEE NOTE 6 | 2 | | 136 | 1016236-1 | FUSE |
| SEE NOTE 6 | 6 | | 135 | 1016236-3 | FUSE |
| SEE NOTE 6 | 1 | | 134 | 1016172 | TRANSFORMER |
| ~~SEE NOTE 6~~ | ~~2~~ | | ~~133~~ | ~~1016168~~ | ~~DIODE~~ |
| ~~SEE NOTE 6~~ | ~~2~~ | | ~~132~~ | ~~1016167~~ | ~~DIODE~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~131~~ | ~~1016054-018~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~130~~ | ~~1016052-2~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~2~~ | | ~~129~~ | ~~1016084-017~~ | ~~RESISTOR, FIXED~~ |
| | ~~1~~ | | ~~128~~ | ~~RN65D2431F~~ | ~~(1896975-327) RESISTOR, FIXED~~ |
| | ~~1~~ | | ~~127~~ | ~~RN65B1501F~~ | ~~(1896975-306) RESISTOR, FIXED~~ |
| SEE NOTE 6 | 1 | | 126 | 1015989-009 | RESISTOR, VARIABLE |
| | 1 | | 125 | 1900705 | NAMEPLATE, APOLLO, GEN |
| | 4 | | 124 | AN535-00-4 | SCREW, DRIVE, ROUNDHEAD |
| | AR | | 123 | MIL-S-40083 (ORD) CLASS 20 | SEALING AND RETAINING COMPOUND (ES-2544-3) |
| | ~~4~~ | | ~~122~~ | ~~MS35216-12~~ | ~~SCREW-MACHINE, PAN HD.~~ |
| SEE NOTE 6 | 1 | | 121 | 1016125-1 | BRACKET, MOUNTING |
| | 6 | | 120 | MS35216-13 | SCREW-MACHINE, PAN HD. |
| SEE NOTE 6 | 8 | | 119 | 1016005-1 | SHIM, SLIDE LOCATING |
| | 1 | | 118 | MS35431-3 | TERMINAL LUG |
| | 4 | | 117 | MS35216-33 | SCREW, PAN HD. |
| | ~~6~~ | | ~~116~~ | ~~AN960-C6~~ | ~~WASHER, FLAT~~ |
| | X | | 115 | 1901670 | RUNNING LIST |
| | X | | 114 | 1900905 | SCHEMATIC DIAGRAM |
| | 1 | | 113 | 1901304-102 | NAMEPLATE |
| | 4 | | 112 | MS35216-30 | SCREW-MACHINE PAN HEAD |
| | 8 | | 111 | MS35216-14 | SCREW-MACHINE PAN HEAD |
| | 8 | | 110 | MS35338-79 | WASHER, LOCK, SPLIT |
| | 18 | | 109 | AN960C6 (1897006-026) | WASHER-FLAT |
| | 8 | | 108 | MS35216-24 | SCREW-MACHINE PAN HEAD |
| SEE NOTE 6 | 8 | | 107 | AN507C832R12 | (1897003-568) SCREW, MACHINE FLAT HEAD |
| | AR | | 106 | MIL-F-14256 | FLUX (ES-2798) |
| | | | | QQ-S-571 | FLUX TYPE AR (ES-2175 TYPE 1 OR 2) |
| | 8 | | 105 | MS35216-8 | SCREW-MACHINE PAN HEAD |
| | 46 | | 104 | MS35216-27 | SCREW-MACHINE PAN HEAD |
| | 6 | | 103 | AN363C1032(1896990-011) | NUT-SELF LOCKING |
| SEE NOTE 6 | 6 | | 102 | 1006783-45 | SCREW-BUTTON HEAD |
| | 2 | | 101 | AN507C632R6(1897003-534) | SCREW-FLAT HEAD |
| | 4 | | 100 | AN507C832R6(1897003-564) | SCREW-FLAT HEAD |
| SEE NOTE 6 | 20 | | 99 | 1016151-004 | NUT-SELF LOCKING |
| | 58 | | 98 | AN363C632(1896990-261) | NUT-SELF LOCKING |
| | AR | | 97 | QQ-S-571 | SOLDER SN 60 (ES-2175 ALLOY) |
| ~~SEE NOTE 6~~ | ~~4~~ | | ~~96~~ | ~~1015860-008~~ | ~~SPACER~~ |
| SEE NOTE 6 | 4 | | 95 | 1015860-003 | SPACER |
| | ~~4~~ | | ~~94~~ | ~~ST20XD02(1896962-004)~~ | ~~TERMINAL MIL-T-55155~~ |
| SEE NOTE 6 | 8 | | 93 | 1006783-44 | SCREW-BUTTON HEAD |
| SEE NOTE 6 | 1 | | 92 | 1015785-010 | SLIDE ASSY L.H. |
| SEE NOTE 6 | 1 | | 91 | 1015785-009 | SLIDE ASSY R.H. |

LIST OF PARTS AND MATERIALS

| | QUANTITY REQUIRED 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|
| | 1 | | 90 | 1900148 | WIRING HARNESS A |
| SEE NOTE 6 | 1 | | 89 | 1015869-155 | LIGHT INDICATOR |
| | 1 | | 88 | RE70-G-69R8 (1897094-274) | RESISTOR MIL-R-18546 |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~87~~ | ~~1016970-448~~ | ~~RESISTOR, FIXED~~ |
| SEE NOTE 6 | 5 | | 86 | 1015989-004 | RESISTOR-VARIABLE |
| SEE NOTE 6 | 5 | | 85 | 1015989-007 | RESISTOR-VARIABLE |
| | ~~1~~ | | ~~84~~ | ~~RN65D1001F (1896975-288)~~ | ~~RESISTOR, FIXED MIL-R-10509/2~~ |
| | ~~2~~ | | ~~83~~ | ~~RN65D1003F (1896975-481)~~ | ~~RESISTOR, FIXED MIL-R-10509/2~~ |
| ~~SEE NOTE 6~~ | ~~2~~ | | ~~82~~ | ~~1016056-001~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~81~~ | ~~(1896970-237)RN75C1211F~~ | ~~RESISTOR, FIXED~~ |
| SEE NOTE 6 | 2 | | 80 | 1016055-001 | RESISTOR, FIXED |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~79~~ | ~~1016054-16~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~78~~ | ~~1016054-15~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~77~~ | ~~1016054-14~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~4~~ | | ~~76~~ | ~~1016054-13~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~75~~ | ~~1016054-12~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~2~~ | | ~~74~~ | ~~1016054-11~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~73~~ | ~~1016054-10~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~72~~ | ~~1016054-9~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~71~~ | ~~1016054-8~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~70~~ | ~~1016054-7~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~69~~ | ~~1016054-6~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~68~~ | ~~1016054-1~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~67~~ | ~~1016052-1~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~66~~ | ~~1016053-12~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~65~~ | ~~1016053-11~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~64~~ | ~~1016053-10~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~63~~ | ~~1016053-9~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~62~~ | ~~1016053-8~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~61~~ | ~~1016053-7~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~60~~ | ~~1016053-6~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~59~~ | ~~1016053-5~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~58~~ | ~~1016053-4~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~4~~ | | ~~57~~ | ~~1016053-3~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~56~~ | ~~1016053-2~~ | ~~RESISTOR, FIXED~~ |
| ~~SEE NOTE 6~~ | ~~2~~ | | ~~55~~ | ~~1016053-1~~ | ~~RESISTOR, FIXED~~ |
| | 5 | | 54 | MS16108-2A | (7901112-002) JACK-TEST POINT |
| | ~~1~~ | | ~~53~~ | ~~1016289~~ | ~~SENSOR, IMU~~ |
| | 7 | | 52 | 1N649 (1896966-006) | SEMICONDUCTOR MIL-S-19500 |
| ~~SEE NOTE 6~~ | ~~1~~ | | ~~51~~ | ~~1N3016B(1896966-063)~~ | ~~SEMICONDUCTOR DEVICE DIODE MIL-S-19500~~ |
| | | | | | |
| SEE NOTE 6 | 1 | | 49 | 1015939-12 | SEMICONDUCTOR DEVICE, DIODE |
| SEE NOTE 6 | 7 | | 48 | 1015967-001 | SEMICONDUCTOR DEVICE, DIODE |
| SEE NOTE 6 | 7 | | 47 | 1016024-001 | RELAY-ARMATURE |
| SEE NOTE 6 | 8 | | 46 | 1015837-001 | RELAY-ARMATURE |

LIST OF PARTS AND MATERIALS

| | QUANTITY REQUIRED 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|
| SEE NOTE 6 | 1 | | 45 | 1015833-11 | RELAY-THERMAL, TIME DELAY |
| SEE NOTE 6 | 1 | | 44 | 1015914-002 | RELAY-ARMATURE |
| SEE NOTE 6 | 3 | | 43 | 1015832-318 | RELAY |
| SEE NOTE 6 | 1 | | 42 | 1015832-320 | RELAY |
| SEE NOTE 6 | 2 | | 41 | 1015832-312 | RELAY |
| SEE NOTE 6 | 1 | | 40 | 1016047-017 | CAPACITOR |
| SEE NOTE 6 | 1 | | 39 | 1016063 | REACTOR |
| SEE NOTE 6 | 1 | | 38 | 1015998 | AMPLIFIER, MAGNETIC |
| SEE NOTE 6 | 1 | | 37 | 1015839 | AMPLIFIER, MAGNETIC |
| SEE NOTE 6 | 1 | | 36 | 1015840 | AMPLIFIER, MAGNETIC |
| SEE NOTE 6 | 1 | | 35 | 1016103 | TRANSFORMER |
| SEE NOTE 6 | 1 | | 34 | 1015997 | TRANSFORMER, POWER STEP DOWN |
| SEE NOTE 6 | 1 | | 33 | 1016098-8 | FUSEHOLDER |
| SEE NOTE 6 | 1 | | 32 | 1016098-7 | FUSEHOLDER |
| SEE NOTE 6 | 1 | | 31 | 1016098-10 | FUSEHOLDER |
| SEE NOTE 6 | 1 | | 30 | 1016098-9 | FUSEHOLDER |
| SEE NOTE 6 | 1 | | 29 | 1016098-4 | FUSEHOLDER-ILLUMINATED |
| SEE NOTE 6 | 1 | | 28 | 1016098-3 | FUSEHOLDER-ILLUMINATED |
| SEE NOTE 6 | 2 | | 27 | 1016098-5 | FUSEHOLDER-ILLUMINATED |
| SEE NOTE 6 | 3 | | 26 | 1016098-2 | FUSEHOLDER-ILLUMINATED |
| SEE NOTE 6 | 2 | | 25 | 1016098-1 | FUSEHOLDER-ILLUMINATED |
| SEE NOTE 6 | 1 | | 24 | 1015869-154 | LIGHT-INDICATOR |
| SEE NOTE 6 | 1 | | 23 | 1015869-153 | LIGHT-INDICATOR |
| SEE NOTE 6 | 1 | | 22 | 1015869-160 | LIGHT-INDICATOR |
| SEE NOTE 6 | 1 | | 21 | 1015869-350 | LIGHT-INDICATOR SWITCH ASSY |
| SEE NOTE 6 | 1 | | 20 | 1015869-531 | LIGHT-INDICATOR SWITCH ASSY |
| SEE NOTE 6 | 1 | | 19 | 1015869-724 | LIGHT-INDICATOR SWITCH ASSY |
| SEE NOTE 6 | 1 | | 18 | 1015869-720 | LIGHT-INDICATOR SWITCH ASSY |
| SEE NOTE 6 | 1 | | 17 | 1015869-809 | LIGHT-INDICATOR SWITCH ASSY |
| SEE NOTE 6 | 4 | | 16 | 1015974-112 | KNOB |
| SEE NOTE 6 | 1 | | 15 | 1016057-002 | RESISTOR, VARIABLE |
| SEE NOTE 6 | 2 | | 14 | 1016057-001 | RESISTOR, VARIABLE |
| | 3 | | 13 | MS91528-2K2B | KNOB |
| SEE NOTE 6 | 1 | | 12 | 1015825-033 | SWITCH, ROTAR |
| SEE NOTE 6 | 1 | | 11 | 1015859-004 | SWITCH, ROTAR |
| SEE NOTE 6 | 1 | | 10 | 1015859-003 | SWITCH, ROTAR |
| SEE NOTE 6 | 1 | | 9 | 1016080-105 | AMMETER-MICROAMPERES, DC. |
| SEE NOTE 6 | 2 | | 8 | 1016080-505 | AMMETER-MICROAMPERES, DC. |
| SEE NOTE 6 | 1 | | 7 | 1016080-205 | AMMETER-MICROAMPERES, DC. |
| SEE NOTE 6 | 1 | | 6 | 1016038-612 | AMMETER-MICROAMPERES, DC. |
| | 1 | | 5 | 1900772 | FRONT PANEL |
| | 2 | | 4 | 1900015-071 | HANDLE ASSY |
| | 1 | | 3 | 1900942 | TERMINAL BOARD (INSEP ASSY) |
| | 1 | | 2 | 1900941 | TERMINAL BOARD (INSEP ASSY) |
| | 1 | | 1 | 1900769 | CHASSIS (INSEP ASSY) |

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900004-011 | 1900004-011 | |
| APPLICATION | | |

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL –
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Summerville DATE 5 SEP 63
CHECKED Wilson 10 SEP 63
APPROVAL H. Wenton
APPROVAL 5/11/64
NASA APPROVAL 5-26-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

TEMPERATURE MONITOR AND CONTROL ASSEMBLY

CODE IDENT NO
SIZE E
1900058
SCALE FULL
SHEET 1 OF 3

B 1900058 2

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD |
| A₁ | | (1) ADDED 2 ITEMS TO LIST OF PARTS | S.O. 5,510 | 30 APR 63 | Tamsen |
| B | | 1) ADDED "HANDLE ASS'Y, SCREW-P/N 1015826-296, SLIDE ASS'Y R.H. SLIDE ASSY L.H." TO LIST OF MATERIAL.<br>2) ADDED "ASSEMBLY" TO TITLE. | TDRR 01256 | 4 MAY 63 | wk |

**FOR INFORMATION ONLY**

**CLASS B RELEASE TDR No.** 01256 **DATE** 15, MAY 63

| QUANTITY REQUIRED | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| | | | 1 | | | | SLIDE ASS'Y, L.H. |
| | | | 1 | | | | SLIDE ASS'Y, R.H. |
| | | | | | | 1015826-296 | SCREW, FLAT HD, HEX SOCKET |
| | | | 2 | | | | HANDLE ASS'Y |
| | | | 1 | | | 1015840 | AMPLIFIER, MAGNETIC |
| | | | 1 | | | 1015839 | AMPLIFIER, MAGNETIC |

LIST OF PARTS AND MATERIALS

| APPLICATION | | |
|---|---|---|
| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
| 1900004 | 1900004 | |

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + − ANGLES + −

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN W. Thick DATE 9 APR 63
CHECKED 10 APR 63
APPROVAL 10 APR 63
APPROVAL 10 APR 63
NASA APPROVAL 5/15/63
5-15-63
MIT APPROVAL 15 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

# TEMPERATURE MONITOR & CONTROL ASSEMBLY

CODE IDENT NO.
SIZE D
1900058
SCALE
SHEET

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
| A1 | | (1)ADDED 2 ITEMS TO LIST OF PARTS | S.O. 5510 | 30 APR 63 | Tamsen |
| B | | 1)ADDED "HANDLE ASS'Y, SCREW-P/N 1015826-296, SLIDE ASS'Y RH, SLIDE ASSY L.H." TO LIST OF MATERIAL.<br>2)ADDED "ASSEMBLY" TO TITLE. | TDRR 01256 | 4 MAY 63 | WK |
| B1 | | CHANGE IN ACCORDANCE WITH MXC 187187 | | 17 JUN 63 | JLC |
| C | | DELETED "AMPLIFIER, MAGNETIC P/N 1015838" TO LIST OF MATERIAL | MXC-187430 | 24 JUNE 63 | CJP |
| D | | CHANGED IN ACCORDANCE WITH MXC 187843 | | 5 JUL 63 | RW |
| E | | CHANGE IN ACCORDANCE WITH MXC 188566 | | 6 AUG 63 | WRZ |
| F | | CHANGE IN ACCORDANCE WITH MXC 189194 REVISED PER TDRR 03696 | WK 10 Oct 63 | 4 SEPT 63 | |

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| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | 1 | | | MS3127E-24-61SZ | CONNECTOR |
| | | | 1 | | | MS3127E-24-61PZ | CONNECTOR |
| | | | 1 | | | RE70-G-70R0 | ↑ |
| | | | 1 | | | RN65B1210F | |
| | | | 1 | | | 1015978-443 | RESISTOR FIXED |
| | | | 2 | | | 1015989-004 | RESISTOR VARIABLE |
| | | | 1 | | | 1016063 | CHOKE 110 MH |
| | | | 2 | | | 1016080-505 | ↑ |
| | | | 1 | | | 1016080-205 | |
| | | | 1 | | | 1016080-105 | AMMETER-MICROAM, DC |
| | | | 1 | | | 1016038-512 | METER, MICROAMP |
| | | | 2 | | | 1016053-001 | RESISTOR WIRE WOUND |
| | | | 1 | | | ↑ -002 | ↑ |
| | | | 4 | | | -003 | |
| | | | 1 | | | -004 | |
| | | | 1 | | | -005 | |
| | | | 1 | | | -006 | |
| | | | 1 | | | -007 | |
| | | | 1 | | | -008 | |
| | | | 1 | | | -009 | |
| | | | 1 | | | -010 | |
| | | | 1 | | | -011 | |
| | | | 1 | | | 1016053-012 | |
| | | | 1 | | | 1016054-001 | |
| | | | 1 | | | ↑ -006 | |
| | | | 1 | | | -007 | |
| | | | 1 | | | -008 | |
| | | | 1 | | | -009 | |
| | | | 1 | | | -010 | |
| | | | 2 | | | -011 | |
| | | | 1 | | | -012 | |
| | | | 4 | | | 1016054-013 | RESISTOR WIRE WOUND |
| | | | 3 | | | 1016057-001 | RESISTOR, POTENTIOMETER |
| | | | 1 | | | 1016057-002 | RESISTOR, POTENTIOMETER |
| | | | 1 | | | 1016052-001 | RESISTOR, FIXED |
| | | | 2 | | | 1015989-007 | RESISTOR, VARIABLE |
| | | | 2 | | | 1016055-001 | RESISTOR, FIXED |
| | | | 3 | | | 1016056-001 | ↑ |
| | | | 2 | | | 1896975-481 | |
| | | | 1 | | | 1016054-014 | |
| | | | 1 | | | 1016054-015 | |
| | | | 1 | | | 1016054-016 | RESISTOR, FIXED |
| | | | 1 | | | 1015859-003 | SWITCH ROTARY |
| | | | 1 | | | 1015859-004 | SWITCH ROTARY |
| | | | 1 | | | 1015825-014 | SWITCH ROTARY |
| | | | 1 | | | 1016039-001 | TRANSFORMER |

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | 1 | | | 1015998-001 | MAGNETIC AMPLIFIER ✓ |
| | | | 1 | | | 1000287-001 | CURRENT SENSOR |
| | | | 10 | | | 1896966-006 | SEMICONDUCTOR DIODE |
| | | | 6 | | | 1015967-001 | SEMICONDUCTOR DIODE |
| | | | 7 | | | 1016024-001 | RELAY-ARMATURE |
| | | | 1 | | | 1015832-320 | RELAY-ARMATURE |
| | | | 2 | | | 1015832-312 | RELAY-ARMATURE |
| | | | 1 | | | 1015914-002 | |
| | | | 3 | | | 1015832-318 | RELAY-ARMATURE |
| | | | 1 | | | 1015833-011 | RELAY-THERMAL |
| | | | 1 | | | 1015996-001 | RELAY 28 POLE |
| | | | 1 | | | 1015996-002 | RELAY 34 POLE |
| | | | 1 | | | 1015998 | MAGNETIC AMPLIFIER ✓ |
| | | | 1 | | | 1015997 | TRANSFORMER |
| | | | 1 | | | | SLIDE ASS'Y, L.H. |
| | | | 1 | | | | SLIDE ASS'Y, R.H. |
| | | | | | | 1015826-296 | SCREW, FLAT HD, HEX SOCKET |
| | | | 2 | | | | HANDLE ASS'Y |
| | | | 1 | | | 1015840 | AMPLIFIER, MAGNETIC |
| | | | 1 | | | 1015839 | AMPLIFIER, MAGNETIC |

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

**FOR INFORMATION ONLY**

**CLASS B RELEASE TDR No. 01256 DATE 15 MAY 63**

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900004 | 1900004 | |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

| FRACTIONS | DECIMALS | ANGLES |
|---|---|---|
| + | + | + |
| − | − | − |

DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN W. Thiele DATE 9 APR 63
CHECKED Kawalec 10 APR 63
APPROVAL 10 APR 63
APPROVAL 10 APR 63
NASA APPROVAL 5/15/63
5-15-63
MIT APPROVAL 15 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

## TEMPERATURE MONITOR & CONTROL ASSEMBLY

CODE IDENT NO.
SIZE D
1900058
SCALE
SHEET

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

H 1900058

REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD |
|---|---|---|---|---|---|
| A1 | | ( )ADDED 2 ITEMS TO LIST OF PARTS | D.O. 51510 | 30 APR 63 | Tamsen |
| B | | (1)ADDED "HANDLE ASS'Y, SCREW-P/N 1015826-296, SLIDE ASS'Y R.H., SLIDE ASSY L.H." TO LIST OF MATERIAL.<br>(2)ADDED "ASSEMBLY" TO TITLE. | TDRR 01256 | 14 MAY 63 | WK |
| B1 | | CHANGE IN ACCORDANCE WITH MXC 187187 | | 17 JUN 63 | JLC |
| C | | DELETED "AMPLIFIER, MAGNETIC P/N 1015838" TO LIST OF MATERIAL | MXC-187430 | 24 JUNE 63 | RJP |
| D | | CHANGED IN ACCORDANCE WITH MXC 187843 | | 5 JUL 63 | |
| E | | CHANGE IN ACCORDANCE WITH MXC 188566 | | 6 AUG 63 | WRZ |
| F | | CHANGE IN ACCORDANCE WITH MXC 189194. REVISED PER TDRR 03696 | 8 Oct 63 | 4 SEPT 63 | |
| G | | CHANGE IN ACCORDANCE WITH MXC 189923 PER TDRR 08818 | | 7 NOV 63 | SH |
| H | | REPLACED WITH CHANGE BY REV. "J" PER MXC 190314<br>PER TDRR 08819 | | 7 NOV 63 | SH |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | 1 | | | MS3127E-24-61SZ | CONNECTOR |
| | | | 1 | | | MS3127E-24-61PZ | CONNECTOR |
| | | | 1 | | | RE70-G-69R8 | 1897094-274 |
| | | | 1 | | | RN65B1210F | |
| | | | 1 | | | 1015978-443 | RESISTOR FIXED |
| | | | 2 | | | 1015989-004 | RESISTOR VARIABLE |
| | | | 1 | | | 1016063 | CHOKE 110 MH |
| | | | 2 | | | 1016080-505 | |
| | | | 1 | | | 1016080-205 | |
| | | | 1 | | | 1016080-105 | AMMETER-MICROAM, DC |
| | | | 1 | | | 1016038-512 | METER, MICROAMP |
| | | | 2 | | | 1016053-001 | RESISTOR WIRE WOUND |
| | | | 1 | | | -002 | |
| | | | 4 | | | -003 | |
| | | | 1 | | | -004 | |
| | | | 1 | | | -005 | |
| | | | 1 | | | -006 | |
| | | | 1 | | | -007 | |
| | | | 1 | | | -008 | |
| | | | 1 | | | -009 | |
| | | | 1 | | | -010 | |
| | | | 1 | | | -011 | |
| | | | 1 | | | 1016053-012 | |
| | | | 1 | | | 1016054-001 | |
| | | | 1 | | | -006 | |
| | | | 1 | | | -007 | |
| | | | 1 | | | -008 | |
| | | | 1 | | | -009 | |
| | | | 1 | | | -010 | |
| | | | 2 | | | -011 | |
| | | | 1 | | | -012 | |
| | | | 4 | | | 1016054-013 | RESISTOR WIRE WOUND |
| | | | 3 | | | 1016057-001 | RESISTOR, POTENTIOMETER |
| | | | 1 | | | 1016057-002 | RESISTOR, POTENTIOMETER |
| | | | 1 | | | 1016052-001 | RESISTOR, FIXED |
| | | | 2 | | | 1015989-007 | RESISTOR, VARIABLE |
| | | | 2 | | | 1016055-001 | RESISTOR, FIXED |
| | | | 3 | | | 1016056-001 | |
| | | | 2 | | | 1896975-481 | |
| | | | 1 | | | 1016054-014 | |
| | | | 1 | | | 1016054-015 | |
| | | | 1 | | | 1016054-016 | RESISTOR, FIXED |
| | | | 1 | | | 1015859-003 | SWITCH ROTARY |
| | | | 1 | | | 1015859-004 | SWITCH ROTARY |
| | | | 1 | | | 1015825-014 | SWITCH ROTARY |
| | | | 1 | | | 1016103 | TRANSFORMER |
| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| QUANTITY REQUIRED | | | | | | LIST OF PARTS AND MATERIALS | |

**FOR INFORMATION ONLY**

**CLASS B RELEASE TDR No. 01256 DATE 15 MAY 63**

Ⓗ **REPLACED WITH CHANGE BY REV "J"**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | 7 | | | 1015837-001 | RELAY |
| | | | 1 | | | 1015869-350 | SWITCH (LAMP) INDICATOR ASSY. |
| | | | 1 | | | -531 | |
| | | | 1 | | | -351 | |
| | | | 1 | | | -720 | |
| | | | 1 | | | -809 | |
| | | | 1 | | | -154 | |
| | | | 1 | | | -153 | |
| | | | 1 | | | 1015869-152 | SWITCH (LAMP) INDICATOR ASSY. |
| | | | 1 | | | 1015939-012 | SEMICONDUCTOR DIODE ZENER |
| | | | 1 | | | 1896966-063 | SEMICONDUCTOR DIODE ZENER |
| | | | 10 | | | 1015798-010 | NUT, ANCHOR FLOATING |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | 7 | | | MS16108-1A | JACK-TEST POINT |
| | | | 1 | | | 1016098-004 | FUSE LITE |
| | | | 1 | | | -010 | |
| | | | 1 | | | -009 | |
| | | | 1 | | | -008 | |
| | | | 1 | | | -007 | |
| | | | 2 | | | -005 | |
| | | | 1 | | | -003 | |
| | | | 3 | | | -002 | |
| | | | 2 | | | 1016098-001 | FUSE LITE |
| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| QUANTITY REQUIRED | | | | | | LIST OF PARTS AND MATERIALS | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | 1 | | | 1000287-001 | CURRENT SENSOR |
| | | | 8 | | | 1896966-006 | SEMICONDUCTOR DIODE |
| | | | 9 | | | 1015967-001 | SEMICONDUCTOR DIODE |
| | | | 7 | | | 1016024-001 | RELAY-ARMATURE |
| | | | 1 | | | 1015832-320 | RELAY-ARMATURE |
| | | | 2 | | | 1015832-312 | RELAY-ARMATURE |
| | | | 1 | | | 1015914-002 | RELAY |
| | | | 3 | | | 1015832-318 | RELAY-ARMATURE |
| | | | 1 | | | 1015833-011 | RELAY-THERMAL |
| | | | | | | | |
| | | | | | | | |
| | | | 1 | | | 1015998 | MAGNETIC AMPLIFIER ✓ |
| | | | 1 | | | 1015997 | TRANSFORMER |
| | | | 1 | | | 1015785-010 | SLIDE ASS'Y, L.H. |
| | | | 1 | | | 1015785-009 | SLIDE ASS'Y, R.H. |
| | | | 10 | | | 1015826-296 | SCREW, FLAT HD, HEX SOCKET |
| | | | 2 | | | 1900015-071 | HANDLE ASS'Y |
| | | | 1 | | | 1015840 | AMPLIFIER, MAGNETIC |
| | | | 1 | | | 1015839 | AMPLIFIER, MAGNETIC |
| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| QUANTITY REQUIRED | | | | | | LIST OF PARTS AND MATERIALS | |

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900004 | 1900004 | |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

| FRACTIONS | DECIMALS | ANGLES |
|---|---|---|
| + | + | + |
| − | − | − |

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN W. Thick DATE 9 APR 63
CHECKED 10 APR 63
APPROVAL 10 APR 63
APPROVAL 10 APR 63
NASA APPROVAL 5/15/63
M.I.T APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

# TEMPERATURE MONITOR & CONTROL ASSEMBLY

CODE IDENT NO.
SIZE D
1900058
SCALE
SHEET

APOLLO G&N Specification
PS-1900058
10 March 1964
Class B Release
TDRR 06824

### PROCUREMENT SPECIFICATION

### FOR

### TEMPERATURE MONITOR AND CONTROL ASSEMBLY

Record of Revisions

| Date | Revision Letter | TDRR No. | Pages Revised | Approvals |  |
|---|---|---|---|---|---|
|  |  |  |  | MIT | NASA |
|  |  |  |  |  |  |
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|  |  |  |  |  |  |

This specification consists of page i to iii and 1 to 19 inclusive.

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### PROCUREMENT SPECIFICATION

### FOR

### TEMPERATURE MONITOR AND CONTROL ASSEMBLY

The purpose of this document is to establish the manufacturing and test requirements for procurement of the Temperature Monitor and Control Assembly for use in the APOLLO Guidance and Navigation Ground Support Equipment.

W Kupfer 10 Mar 64
MIT/IL DATE

3/10/64
NASA/MSC DATE

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### PROCUREMENT SPECIFICATION

### FOR

### TEMPERATURE MONITOR AND CONTROL ASSEMBLY

## 1. SCOPE

1.1 PURPOSE. This specification establishes the requirements for the procurement of the Temperature Monitor and Control Assembly, hereafter called the monitor.

## 2. APPLICABLE DOCUMENTS

2.1 EFFECTIVE ISSUES. The following documents of the issue in effect on the date of invitation for bids form a part of this specification to the extent specified herein.

SPECIFICATIONS

Military

| | |
|---|---|
| MIL-P-116 | Preservation, Methods of |
| MIL-E-17555 | Electronic and Electrical Equipment and Associated Repair Parts, Preparation for Delivery of |

APOLLO G&N

| | |
|---|---|
| ND-1002018 | General Specification for APOLLO Ground Support Equipment |
| ND-1002023 | Procedure for Serialization of Components, Assemblies, etc., for APOLLO Guidance and Navigation Equipment |
| ND-1015404 | General Specification, Configuration, Process and Quality Control Requirements for Suppliers of High Reliability Aritieles for Use in Spacecraft and Supporting Equipment |

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. SOLDER PER MIL-S-6872 (ES-2505-1 TYPE 2 FLUX) USING ITEMS 76 AND 78.
3. VENDOR ITEM - SEE SPEC CONTROL DRAWING.
4. DIMENSION "A" MUST BE EQUAL TO DIMENSION "B" WITHIN .040.
5. DRAWER SLIDE MOUNTING SCREWS AND FRONT PANEL MOUNTING SCREWS SHALL BE SUBJECTED TO TORQUE OF 37-40 IN/LBS AT INSTALLATION.
6. MARK WEIGHT OF ASSEMBLY, (33 LBS), PER ND1002123 ADJACENT TO NAMEPLATE LOCATION.
7. MARK "SCHEM" AND APPLICABLE SCHEMATIC DRAWING NUMBER PER ND 1002019, .12 HIGH, COLOR BLACK.
8. MARK APPLICABLE CONTRACT NUMBER AND SERIAL NUMBER TO ITEM 77 IN ACCORDANCE WITH ND 1002023. LETTERS AND NUMERAL TO BE .06 HIGH.
9. SERIALIZE PER ND 1002023.
10. SECURE SCREWS USING ITEM ㊽
11. SELECT AS REQUIRED.
12. SHIM TO FIT, PEEL OFF EXCESS SHIM STOCK.
13. MARK "DWG REV LTR _" AND APPLICABLE DRAWING REVISION LETTER PER ND 1002019, .12 HIGH, COLOR BLACK, IN LOCATION SHOWN.

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| Z | | REPLACES REV. Y WITH CHANGE PER MXC 190732<br>REVISED PER TDR 08247 | | 31 MAY 64<br>5-4-64 | |
| AA | | CHANGE IN ACCORDANCE WITH MXC 190876 | | 10 FEB 64 | |
| AB | | CHANGE IN ACCORDANCE WITH MXC 90927 | | 10 FEB 64 | |
| AC | | CHANGE IN ACCORDANCE WITH MXC 91381 | | 10 FEB 64 | |
| AD | | CHANGE IN ACCORDANCE WITH MXC 191631 | | 11 FEB 64 | |
| AE | | CHANGE IN ACCORDANCE WITH MXC 191978 08248 | | 12 MAY 64 | |
| AF | | CHANGE IN ACCORDANCE WITH [illegible] 193091 | | 12 FEB 64 | |
| AG | | CHANGE IN ACCORDANCE WITH ECM 93456 PER TDRR 08249 | | 12 FEB 64 | |
| AH | | CHANGE IN ACCORDANCE WITH [illegible] 194151 | | 12 FEB 64 | |
| AJ | | CHANGE IN ACCORDANCE WITH [illegible] 194677<br>REVISED PER TDR 08250 | | 19 FEB 64 | RJF |
| AK | | CHANGE IN ACCORDANCE WITH CM 194681 | | 11 MAR 64 | |
| AL | | CHANGE IN ACCORDANCE WITH CM 195168 PER TDRR 08251 | | [illegible] MAR 64 | |
| AM | | CHANGE IN ACCORDANCE WITH CM 95576 PER TDRR 08252 | | [illegible] MAR 64 | |
| AN | | REVISION STATUS CHANGED PER CM 19649: TDRR 08253 | | [illegible] APR 64 | |

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|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
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| | | | | | | | | |
| SEE NOTE 3 | | | | 8 | | 98 | 1016005-1 | SHIM, SLIDE LOCATING |
| | | | | 10 | | 97 | MS35216-27 | SCREW, PAN HEAD |
| | | | | 8 | | 96 | MS35333-71 | WASHER, LOCK, INT TOOTH |
| | | | | 14 | | 95 | AN960C6 | (1897006-026) WASHER, FLAT |
| SEE NOTE 3 | | | | 4 | | 94 | 1015981-005 | STANDOFF, HEX, THREADED |
| SEE NOTE 11 | | | | 1 | | 93 | MS21919DG 13 THRU 15 | (1897073-113 THRU 115) CLAMP, CUSH |
| SEE NOTE 11 | | | | 1 | | 92 | ↑ 11 ↑ 13 | ( ↑ 111 ↑ 113) ↑ ↑ |
| SEE NOTE 11 | | | | 3 | | 91 | 9 11 | ( 109 111) |
| SEE NOTE 11 | | | | 2 | | 90 | 8 10 | ( 108 110) |
| SEE NOTE 11 | | | | 2 | | 89 | 7 9 | ( 107 109) |
| SEE NOTE 11 | | | | 1 | | 88 | 6 8 | ( 106 108) |
| SEE NOTE 11 | | | | 3 | | 87 | 5 7 | ( 105 107) |
| SEE NOTE 11 | | | | 1 | | 86 | MS21919DG 3 THRU 5 | (1897073-103 THRU 105) CLAMP, CUSH |
| | | | | AR | | 85 | MIL-S-40083-C130 | (ES-2544-5) SEALING COMPOUND |
| | | | | 4 | | 84 | AN535-00-4 (1897109-004) | SCREW, DRIVE, RD. HD. |
| | | | | 1 | | 83 | 1900614 | WIRING HARNESS B |
| | | | | X | | 82 | PS 1900059 | PROCUREMENT SPECIFICATION |
| | | | | 1 | | 81 | 1900615 | WIRE LIST B-B |
| SEE NOTE 3 | | | | 1 | | 80 | 1016024-001 | RELAY, ARMATURE |
| | | | | | | | MIL-F-14256 | FLUX (ES-2798), |
| | | | | AR | | 78 | QQ-S-571 | FLUX TYPE AR (ES 2175 TYPE 1 OR 2 |
| | | | | 1 | | 77 | 1901304-108 | NAMEPLATE, APOLLO, G&N |
| | | | | AR | | 76 | QQ-S-571 | SOLDER, SN60 (ES 2175 ALLOY 1) |
| | | | | X | | 74 | 1900649 | SCHEMATIC DIAGRAM-ELEC |
| | | | | 1 | | 73 | 1900616 | WIRE LIST A-A |
| | | | | 1 | | 72 | 1900186 | WIRING HARNESS |
| | | | | 22 | | 71 | AN363C632 | ↑ ↑ ↑ (1896990-261) |
| | | | | 46 | | 70 | 1016151-004 | |
| | | | | 4 | | 69 | AN363C1032 | NUT, SELF LOCKING (1896990-011) |
| | | | | 4 | | 68 | ↑ -40 | ↑ ↑ ↑ |
| | | | | 12 | | 67 | -26 | |
| | | | | 20 | | 66 | -25 | |
| | | | | 53 | | 65 | MS35216-24 | SCREW, PAN HEAD |
| | | | | | | | | |
| SEE NOTE 3 | | | | 4 | | 63 | 1006783-45 | ↑ BUTTON HEAD |
| SEE NOTE 3 | | | | 8 | | 62 | 1006783-44 | BUTTON HEAD |
| SEE NOTE 3 | | | | 8 | | 61 | 1015831-253 | SCREW, FLAT HEAD |
| SEE NOTE 3 | | | | 12 | | 60 | 1015860-025 | SPACER |
| SEE NOTE 3 | | | | 1 | | 59 | ↑ -108 | ↑ ↑ |
| SEE NOTE 3 | | | | 1 | | 58 | -316 | |
| SEE NOTE 3 | | | | 1 | | 57 | -704 | |
| SEE NOTE 3 | | | | 1 | | 56 | -318 | |
| SEE NOTE 3 | | | | 1 | | 55 | -705 | |
| SEE NOTE 3 | | | | 1 | | 54 | -319 | |
| SEE NOTE 3 | | | | 1 | | 53 | -706 | |
| SEE NOTE 3 | | | | 1 | | 52 | -352 | |
| SEE NOTE 3 | | | | 1 | | 51 | -707 | |
| SEE NOTE 3 | | | | 1 | | 50 | -321 | |
| SEE NOTE 3 | | | | 1 | | 49 | -708 | |
| SEE NOTE 3 | | | | 1 | | 48 | -322 | |
| SEE NOTE 3 | | | | 1 | | 47 | -709 | |
| SEE NOTE 3 | | | | 1 | | 46 | -307 | |
| SEE NOTE 3 | | | | 1 | | 45 | -710 | |
| SEE NOTE 3 | | | | 1 | | 44 | -519 | |
| SEE NOTE 3 | | | | 1 | | 43 | -333 | |
| SEE NOTE 3 | | | | 1 | | 42 | -526 | |
| SEE NOTE 3 | | | | 1 | | 41 | 1015869-317 | LIGHT, INDICATOR |
| SEE NOTE 3 | | | | | | 40 | | |
| SEE NOTE 3 | | | | 1 | | 39 | 1015869-719 | ↑ ↑ |
| SEE NOTE 3 | | | | 1 | | 38 | 1015869-103 | LIGHT, INDICATOR |
| | | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| | QUANTITY REQUIRED | | | | | LIST OF PARTS AND MATERIALS | | |

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 01314 DATE 22 MAY 63

Ⓩ REPLACES REV Y WITH CHANGE |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| SEE NOTE 3 | | | | 1 | | 37 | ↑ -509 | ↑ ↑ |
| SEE NOTE 3 | | | | 1 | | 36 | -721 | |
| SEE NOTE 3 | | | | 1 | | 35 | -510 | |
| SEE NOTE 3 | | | | 1 | | 34 | -722 | |
| SEE NOTE 3 | | | | 1 | | 33 | -304 | |
| SEE NOTE 3 | | | | 1 | | 32 | -511 | |
| SEE NOTE 3 | | | | 1 | | 31 | -711 | |
| SEE NOTE 3 | | | | 1 | | 30 | -503 | |
| SEE NOTE 3 | | | | 1 | | 29 | 1015869-712 | LIGHT, INDICATOR |
| | | | | 1 | | 28 | 1015869-537 | ↑ ↑ |
| | | | | 3 | | 27 | 1015869-536 | LIGHT, INDICATOR |
| | | | | 2 | | 26 | MS90078-7-1 | FUSE (1897077-107) |
| | | | | 2 | | 25 | MS90078-12-1 | FUSE (1897077-112) |
| | | | | 2 | | 24 | MS26572-1 | ↑ ↑ |
| SEE NOTE 3 | | | | 1 | | 23 | 1015873-008 | |
| SEE NOTE 3 | | | | 1 | | 22 | 1015873-001 | FUSE HOLDER |
| SEE NOTE 3 | | | | 1 | | 21 | 1015992-001 | KNOB, POINTER |
| SEE NOTE 3 | | | | 1 | | 20 | 1015993-001 | KNOB, LOCK |
| | | | | 1 | | 19 | 1901321 | RESISTOR, VARIABLE |
| SEE NOTE 3 | | | | 1 | | 18 | 1015994-001 | SWITCH, PUSH |
| SEE NOTE 3 | | | | 1 | | 17 | 1015785-010 | SLIDE ASSEMBLY (L.H.) |
| SEE NOTE 3 | | | | 1 | | 16 | 1015785-009 | SLIDE ASSEMBLY (R.H.) |
| SEE NOTE 3 | | | | 10 | | 15 | 1015832-318 | RELAY, SENSITIVE |
| SEE NOTE 3 | | | | 9 | | 14 | 1015802-004 | RELAY, ARMATURE |
| SEE NOTE 3 | | | | 24 | | 13 | 1015837-001 | RELAY, ARMATURE |
| SEE NOTE 3 | | | | 1 | | 12 | 1016096-002 | RELAY, TIME DELAY |
| SEE NOTE 3 | | | | 1 | | 11 | 1016096-001 | RELAY, TIME DELAY |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | 1 | | 7 | 1900233-011 | DIODE & RESISTOR BOARD ASSY |
| | | | | 1 | | 6 | 1900672-011 | DIODE BOARD ASSEMBLY |
| | | | | 1 | | 5 | 1900230 | BRACKET, MOUNTING (INSEP) ASSY |
| | | | | 1 | | 4 | 1900229 | PLATE, MOUNTING RELAY (INSEP) ASSY |
| | | | | 2 | | 3 | 1900015-051 | HANDLE ASSEMBLY |
| | | | | 1 | | 2 | 1900228 | DRAWER (INSEP) ASSEMBLY |
| | | | | 1 | | 1 | 1900227 | PANEL, FRONT |
| | | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| | QUANTITY REQUIRED | | | | | LIST OF PARTS AND MATERIALS | | |

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| AN | AN |
| AM | AM |
| AL | AL |
| AK | AJ |
| AJ | AJ |
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| AE | AE |
| AD | AC |
| AC | AC |
| AB | Z |
| AA | Z |
| Z | Z |
| SHEET 1 | SHEET 2 |
| REVISION STATUS OF SHEETS | |

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| | | |
| 1900004-011 | 1900004-011 | -011 |
| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
| APPLICATION | | |

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN E. Miller DATE 14 JUN 63
CHECKED Ed Foster 25 JUN 63
APPROVAL 25 JUN 63
APPROVAL Goldman
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

TEST CONTROL ASSEMBLY

CODE IDENT NO.
SIZE E
1900059
SCALE FULL
SHEET 1 OF 2

1900059 AN

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. SOLDER PER MIL-S-6872 (ES-2505-1 TYPE 2 FLUX) USING ITEMS 76 AND 78.
3. VENDOR ITEM - SEE SPEC CONTROL DRAWING.
4. DIMENSION "A" MUST BE EQUAL TO DIMENSION "B" WITHIN .040.
5. DRAWER SLIDE MOUNTING SCREWS AND FRONT PANEL MOUNTING SCREWS SHALL BE SUBJECTED TO TORQUE OF 37-40 IN/LBS AT INSTALLATION.
6. MARK WEIGHT OF ASSEMBLY, (33 LBS), PER ND 1002123 ADJACENT TO NAMEPLATE LOCATION.
7. MARK "SCHEM AND APPLICABLE SCHEMATIC DRAWING NUMBER PER ND 1002019, .12 HIGH, COLOR BLACK.
8. MARK APPLICABLE CONTRACT NUMBER AND SERIAL NUMBER TO ITEM 77 IN ACCORDANCE WITH ND 1002023. LETTERS AND NUMERAL TO BE .06 HIGH.
9. SERIALIZE PER ND 1002023.
10. SECURE SCREWS USING ITEM (85)
11. SELECT AS REQUIRED.
12. SHIM TO FIT, PEEL OFF EXCESS SHIM STOCK.
13. MARK "DWG REV LTR _" AND APPLICABLE DRAWING REVISION LETTER PER ND 1002019, .12 HIGH, COLOR BLACK, IN LOCATION SHOWN.

| | QUANTITY REQUIRED | | | | EFFECTIVITY | ITEM NO | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|---|
| | | | | 011 | | | LIST OF PARTS AND MATERIALS | |
| | | | | | | | | |
| | | | | 1 | | 100 | 1015869-540 | LIGHT, INDICATOR |
| SEE NOTE 3 | | | | 1 | | 99 | 1016096-006 | RELAY, TIME DELAY |
| SEE NOTE 3 | | | | 8 | | 98 | 1016005-1 | SHIM, SLIDE LOCATING |
| | | | | 10 | | 97 | MS35216-27 | SCREW, PAN HEAD |
| | | | | 8 | | 96 | MS35333-71 | WASHER, LOCK, INT TOOTH |
| | | | | 14 | | 95 | AN960C6 | (1897006-026) WASHER, FLAT |
| SEE NOTE 3 | | | | 4 | | 94 | 1015981-005 | STANDOFF, HEX., THREADED |
| SEE NOTE 11 | | | | 1 | | 93 | MS21919DG 13 THRU 15 | (1897073-113 THRU 115) CLAMP, CUSH |
| | | | | 1 | | 92 | 11 13 | ( 111 113) |
| | | | | 3 | | 91 | 9 11 | ( 109 111) |
| | | | | 2 | | 90 | 8 10 | ( 108 110) |
| | | | | 2 | | 89 | 7 9 | ( 107 109) |
| | | | | 1 | | 88 | 6 8 | ( 106 108) |
| | | | | 3 | | 87 | 5 7 | ( 105 107) |
| | | | | 1 | | 86 | MS21919DG 3 THRU 5 | (1897073-103 THRU 105) CLAMP, CUSH |
| | | | | AR | | 85 | MIL-S-40083-C130 | (ES-2544-5) SEALING COMPOUND |
| | | | | 4 | | 84 | AN535-00-4 (1897109-004) | SCREW, DRIVE, RD. HD. |
| | | | | 1 | | 83 | 1900614 | WIRING HARNESS B |
| | | | | X | | 82 | PS 1900059 | PROCUREMENT SPECIFICATION |
| | | | | 1 | | 81 | 1900615 | WIRE LIST B-B |
| SEE NOTE 3 | | | | 1 | | 80 | 1016024-001 | RELAY, ARMATURE |
| | | | | | | | MIL-F-14256 | FLUX (ES-2798) |
| | | | | AR | | 78 | QQ-S-571 | FLUX TYPE AR (ES 2175 TYPE 1 OR 2 |
| | | | | 1 | | 77 | 1901304-108 | NAMEPLATE, APOLLO, G&N |
| | | | | AR | | 76 | QQ-S-571 | SOLDER, SN60 (ES 2175 ALLOY 1) |
| | | | | X | | 74 | 1900649 | SCHEMATIC DIAGRAM-ELEC |
| | | | | 1 | | 73 | 1900616 | WIRE LIST A-A |
| | | | | 1 | | 72 | 1900186 | WIRING HARNESS |
| | | | | 22 | | 71 | AN363C632 | (1896990-261) |
| | | | | 50 | | 70 | 1016151-004 | |
| | | | | 4 | | 69 | AN363C1032 | NUT, SELF LOCKING (1896990-011) |
| | | | | 4 | | 68 | -40 | |
| | | | | 12 | | 67 | -26 | |
| | | | | 20 | | 66 | -25 | |
| | | | | 53 | | 65 | MS35216-24 | SCREW, PAN HEAD |
| | | | | | | | | |
| SEE NOTE 3 | | | | 4 | | 63 | 1006783-45 | BUTTON HEAD |
| | | | | 8 | | 62 | 1006783-44 | BUTTON HEAD |
| | | | | 8 | | 61 | 1015831-253 | SCREW, FLAT HEAD |
| | | | | 12 | | 60 | 1015860-025 | SPACER |
| | | | | 1 | | 59 | -108 | |
| | | | | 1 | | 58 | -316 | |
| | | | | 1 | | 57 | -704 | |
| | | | | 1 | | 56 | -318 | |
| | | | | 1 | | 55 | -705 | |
| | | | | 1 | | 54 | -319 | |
| | | | | 1 | | 53 | -706 | |
| | | | | 1 | | 52 | -352 | |
| | | | | 1 | | 51 | -707 | |
| | | | | 1 | | 50 | -321 | |
| | | | | 1 | | 49 | -708 | |
| | | | | 1 | | 48 | -322 | |
| | | | | 1 | | 47 | -709 | |
| | | | | 1 | | 46 | -307 | |
| | | | | 1 | | 45 | -710 | |
| | | | | 1 | | 44 | -519 | |
| | | | | 1 | | 43 | -333 | |
| | | | | 1 | | 42 | -526 | |
| | | | | 1 | | 41 | 1015869-317 | LIGHT, INDICATOR |
| | | | | | | 40 | | |
| | | | | 1 | | 39 | 1015869-719 | |
| | | | | 1 | | 38 | 1015869-103 | LIGHT, INDICATOR |

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| Z | | REPLACES REV. Y WITH CHANGE PER MXC 190732<br>REVISED PER TDR 08247 | | 31 JAN 64<br>12 MAY 64 | ALK<br>WK |
| AA | | CHANGE IN ACCORDANCE WITH MXC 190876 | | 10 FEB 64 | JJJ |
| AB | | CHANGE IN ACCORDANCE WITH MXC 190927 | | 10 FEB 64 | RLP |
| AC | | CHANGE IN ACCORDANCE WITH MXC 191381 | | 10 FEB 64 | RLP |
| AD | | CHANGE IN ACCORDANCE WITH MXC 191631 | | 11 FEB 64 | RLP |
| AE | | CHANGE IN ACCORDANCE WITH MXC 191978 08248 | | 12 MAY 64 | WK |
| AF | | CHANGE IN ACCORDANCE WITH CM 193091 | | 12 FEB 64 | JJJ |
| AG | | CHANGE IN ACCORDANCE WITH ECM 193456 PER TDRR 08249 | | 12 FEB 64<br>12 MAY 64 | JJJ<br>WK |
| AH | | CHANGE IN ACCORDANCE WITH CM 194151 | | 12 FEB 64 | RLP |
| AJ | | CHANGE IN ACCORDANCE WITH CM 194677<br>REVISED PER TDR 08250 | | 19 FEB 64<br>5-12-64 | RJF MEM<br>WK |
| AK | | CHANGE IN ACCORDANCE WITH CM 194681 | | 11 MAR 64 | RK MEM |
| AL | | CHANGE IN ACCORDANCE WITH CM 195168 PER TDRR 08251 | | 16 MAR 64<br>5-12-64 | RGL MEM<br>WK |
| AM | | CHANGE IN ACCORDANCE WITH CM 195576 PER TDRR 08252 | | 26 MAR 64<br>5-12-64 | RK MEM<br>WK |
| Ⓜ AN | | REVISION STATUS CHANGED PER CM 196491 TDRR 08253 | | 6 APR 64<br>5-12-64 | RJL<br>WK |
| AP | | CHANGE IN ACCORDANCE WITH CM 197010 10243 | | 28 MAY 64 | RJW MEM |
| AR | | CHANGE IN ACCORDANCE WITH CM 197477 10764 | | 16 JUNE 64 | RK RWX |

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01314 DATE 22 MAY 63

Ⓩ REPLACES REV Y WITH CHANGE

| | QUANTITY REQUIRED | | | | EFFECTIVITY | ITEM NO | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|---|
| | | | | 011 | | | LIST OF PARTS AND MATERIALS | |
| SEE NOTE 3 | | | | 1 | | 37 | -509 | |
| | | | | 1 | | 36 | -721 | |
| | | | | 1 | | 35 | -510 | |
| | | | | 1 | | 34 | -722 | |
| | | | | 1 | | 33 | -304 | |
| | | | | 1 | | 32 | -511 | |
| | | | | 1 | | 31 | -711 | |
| | | | | 1 | | 30 | -503 | |
| | | | | 1 | | 29 | 1015869-712 | LIGHT, INDICATOR |
| | | | | 1 | | 28 | 1015869-537 | |
| | | | | 2 | | 27 | 1015869-536 | LIGHT, INDICATOR |
| | | | | 2 | | 26 | MS90078-7-1 | FUSE (1897077-107) |
| | | | | 2 | | 25 | MS90078-12-1 | FUSE (1897077-112) |
| | | | | 2 | | 24 | MS26572-1 | |
| SEE NOTE 3 | | | | 1 | | 23 | 1015873-008 | |
| SEE NOTE 3 | | | | 1 | | 22 | 1015873-001 | FUSE HOLDER |
| SEE NOTE 3 | | | | 1 | | 21 | 1015992-001 | KNOB, POINTER |
| SEE NOTE 3 | | | | 1 | | 20 | 1015993-001 | KNOB, LOCK |
| | | | | 1 | | 19 | 1901321 | RESISTOR, VARIABLE |
| SEE NOTE 3 | | | | 1 | | 18 | 1015994-001 | SWITCH, PUSH |
| | | | | 1 | | 17 | 1015785-010 | SLIDE ASSEMBLY (L.H.) |
| | | | | 1 | | 16 | 1015785-009 | SLIDE ASSEMBLY (R.H.) |
| | | | | 10 | | 15 | 1015832-318 | RELAY, SENSITIVE |
| | | | | 9 | | 14 | 1015802-004 | RELAY, ARMATURE |
| | | | | 24 | | 13 | 1015837-001 | RELAY, ARMATURE |
| | | | | 1 | | 12 | 1016096-002 | RELAY, TIME DELAY |
| | | | | 1 | | 11 | 1016096-011 | RELAY, TIME DELAY |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | 1 | | 7 | 1900233-011 | DIODE & RESISTOR BOARD ASSY |
| | | | | 1 | | 6 | 1900672-011 | DIODE BOARD ASSEMBLY |
| | | | | 1 | | 5 | 1900230 | BRACKET, MOUNTING (INSEP) ASSY |
| | | | | 1 | | 4 | 1900229 | PLATE, MOUNTING RELAY (INSEP) ASSY |
| | | | | 2 | | 3 | 1900015-051 | HANDLE ASSEMBLY |
| | | | | 1 | | 2 | 1900228 | DRAWER (INSEP) ASSEMBLY |
| | | | | 1 | | 1 | 1900227 | PANEL, FRONT |

| SHEET 1 | SHEET 2 |
|---|---|
| | |
| | |
| AR | AR |
| AP | AP |
| AN | AN |
| AM | AM |
| AL | AL |
| AK | AJ |
| AJ | AJ |
| AH | AH |
| AG | AG |
| AF | AF |
| AE | AE |
| AD | AC |
| AC | AC |
| AB | Z |
| AA | Z |
| Z | Z |

REVISION STATUS OF SHEETS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900004-011 | 1900004-011 | -011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN E. Miller DATE 14 JUN 63
CHECKED Ed Foster 25 JUN 63
APPROVAL 25 JUN 63
APPROVAL Gehman 5/6/64
NASA APPROVAL 1/4/64
MIT APPROVAL 12 May 64

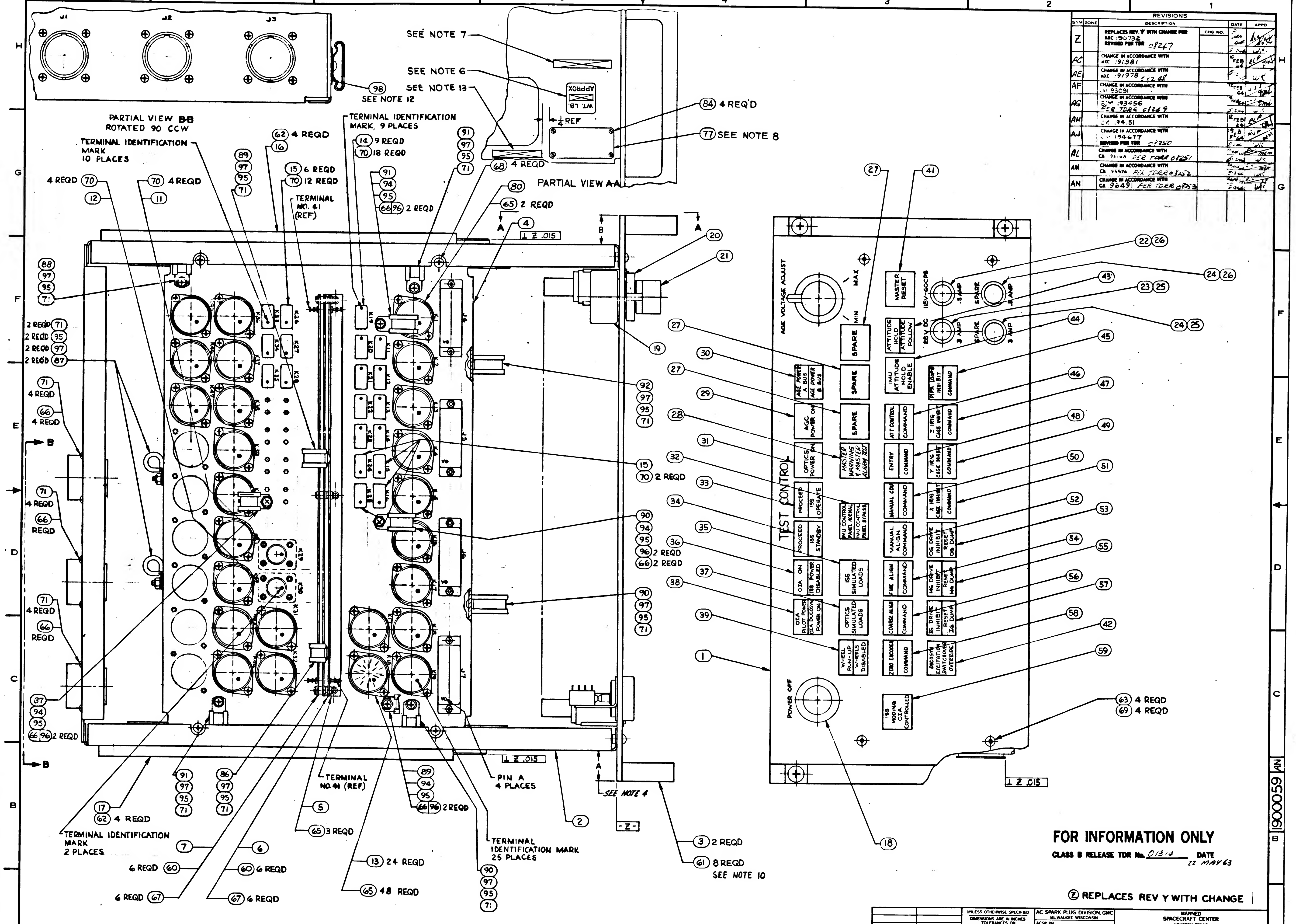
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TEST CONTROL
ASSEMBLY

CODE IDENT NO.
SIZE E
1900059
SCALE FULL
SHEET 1 OF 2

1900059 AR

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD |
| Z | | REPLACES REV. Y WITH CHANGE PER MXC 190732 REVISED PER TDR 08247 | | 3 JAN 64<br>5-2-64 | WK |
| AC | | CHANGE IN ACCORDANCE WITH MXC 191381 | | 10 FEB 64 | RLP |
| AE | | CHANGE IN ACCORDANCE WITH MXC 191978 08248 | | 5-2-64 | WK |
| AF | | CHANGE IN ACCORDANCE WITH CM 93091 | | 12 FEB 64 | JJJ |
| AG | | CHANGE IN ACCORDANCE WITH ECM 193456 PER TDRR 01249 | | MAR 64<br>5-2-64 | WK |
| AH | | CHANGE IN ACCORDANCE WITH CM 194151 | | 12 FEB 64 | RLP |
| AJ | | CHANGE IN ACCORDANCE WITH CM 194677 REVISED PER TDR 01250 | | 19 FEB 64<br>5-2-64 | RJF<br>WK |
| AL | | CHANGE IN ACCORDANCE WITH CM 95-68 PER TDRR 01251 | | MAR 64<br>5-2-64 | WK |
| AM | | CHANGE IN ACCORDANCE WITH CM 95576 PER TDRR 08252 | | 26 MAR 64<br>5-2-64 | WK |
| AN | | CHANGE IN ACCORDANCE WITH CM 96491 PER TDRR 08253 | | APR 64<br>5-2-64 | WK |



**FOR INFORMATION ONLY**

**CLASS B RELEASE TDR No.** 01314 **DATE** 22 MAY 63

Ⓩ REPLACES REV Y WITH CHANGE

| | |
|---|---|
| NEXT ASSY | USED ON |
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN E. Miller DATE 19 Jun 63
CHECKED Ed Foster 25 JUN 63
APPROVAL 25 JUN 63
APPROVAL L. Johnson 5/6/63
NASA APPROVAL
MIT APPROVAL 12 May 64

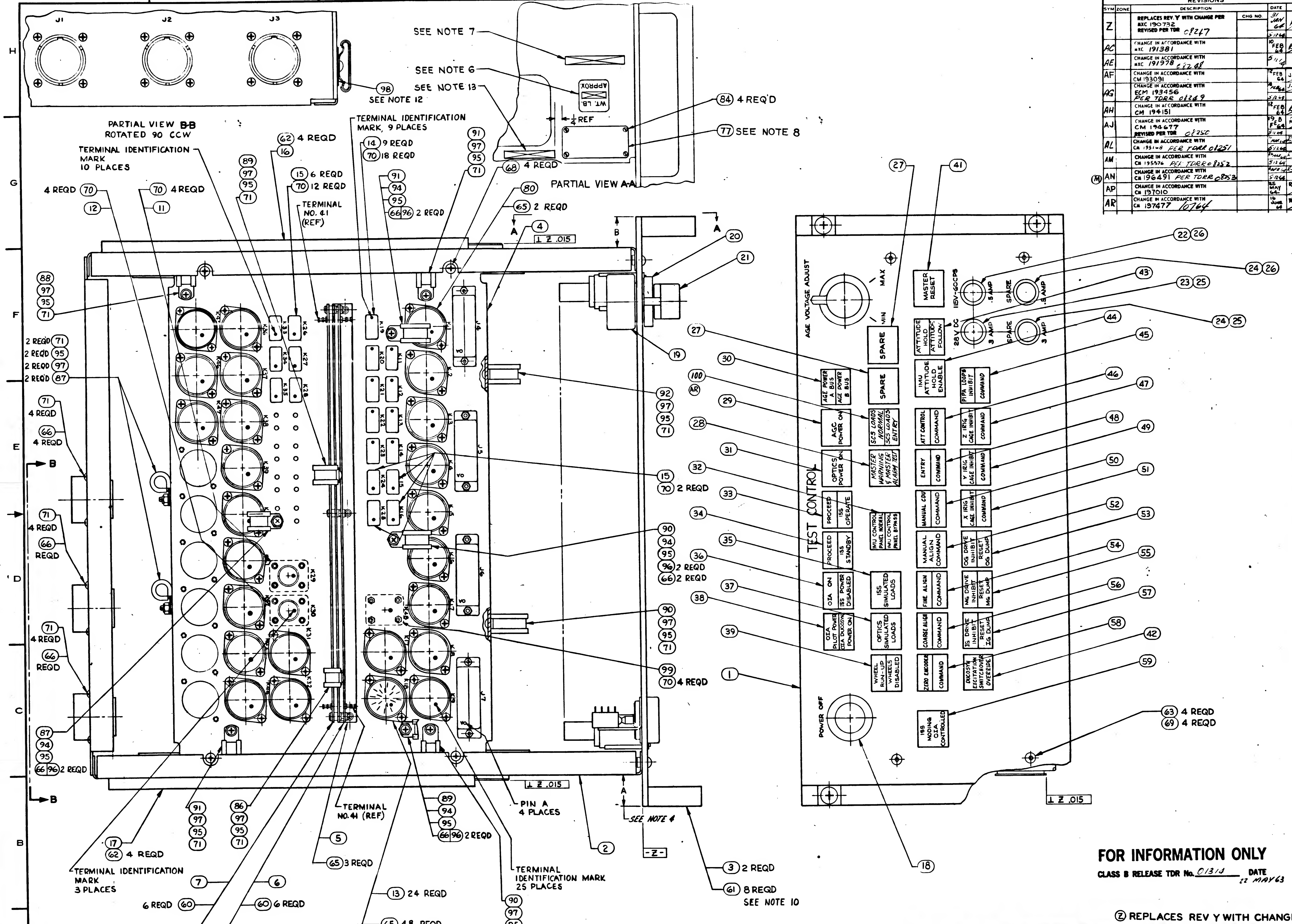
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TEST CONTROL
ASSEMBLY

CODE IDENT NO
SIZE E 1900059
SCALE FULL
SHEET 2 OF 2

1900059 AN

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD |
|---|---|---|---|---|---|
| Z | | REPLACES REV. Y WITH CHANGE PER MXC 190732<br>REVISED PER TDR C8247 | | 31 JAN 64<br>5-12-64 | WK |
| AC | | CHANGE IN ACCORDANCE WITH MXC 191381 | | 10 FEB 64 | RLP |
| AE | | CHANGE IN ACCORDANCE WITH MXC 191978 C8248 | | 5-11-64 | WK |
| AF | | CHANGE IN ACCORDANCE WITH CM 193091 | | 12 FEB 64 | JJJ |
| AG | | CHANGE IN ACCORDANCE WITH ECM 193456 PER TDRR 08249 | | 18 FEB 64<br>5-12-64 | JJJ<br>WK |
| AH | | CHANGE IN ACCORDANCE WITH CM 194151 | | 12 FEB 64 | RLP |
| AJ | | CHANGE IN ACCORDANCE WITH CM 194677<br>REVISED PER TDR 08250 | | 19 FEB 64<br>5-12-64 | RJF MEM<br>WK |
| AL | | CHANGE IN ACCORDANCE WITH CM 195168 PER TDRR 08251 | | 11 MAR 64<br>5-12-64 | RGL MEM<br>WK |
| AM | | CHANGE IN ACCORDANCE WITH CM 195576 PER TDRR 08252 | | 26 MAR 64<br>5-12-64 | KK MEM<br>WK |
| Ⓜ AN | | CHANGE IN ACCORDANCE WITH CM 196491 PER TDRR 08253 | | 6 APR 64<br>5-12-64 | RJL<br>WK |
| AP | | CHANGE IN ACCORDANCE WITH CM 197010 | | 25 MAY 64 | RJW MEM |
| AR | | CHANGE IN ACCORDANCE WITH CM 197477 10764 | | 16 JUNE 64 | WK RWB |



**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01314 DATE 22 MAY 63

Ⓩ REPLACES REV Y WITH CHANGE

| | |
|---|---|
| NEXT ASSY | USED ON |
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN E. Miller DATE 19 Jun 63
CHECKED Ed Foster 25 JUN 63
APPROVAL 25 JUN 63
APPROVAL 5/6/63
NASA APPROVAL
MIT APPROVAL 12 May 64

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TEST CONTROL
ASSEMBLY

CODE IDENT NO.
SIZE E
1900059
SCALE FULL
SHEET 2 OF 2

1900059 AR

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. SOLDER PER MIL-S-6872 (ES-2505-1 TYPE 2 FLUX) USING ITEMS 76 AND 78.
3. VENDOR ITEM - SEE SPEC CONTROL DRAWING.
4. DIMENSION "A" MUST BE EQUAL TO DIMENSION "B" WITHIN .040.
5. DRAWER SLIDE MOUNTING SCREWS AND FRONT PANEL MOUNTING SCREWS SHALL BE SUBJECTED TO TORQUE OF 37-40 IN/LBS AT INSTALLATION.
6. MARK WEIGHT OF ASSEMBLY, (33 LBS), PER ND1002123 ADJACENT TO NAMEPLATE LOCATION.
7. MARK "SCHEM AND APPLICABLE SCHEMATIC DRAWING NUMBER PER ND 1002019, .12 HIGH, COLOR BLACK.
8. MARK APPLICABLE CONTRACT NUMBER AND SERIAL NUMBER TO ITEM 77 IN ACCORDANCE WITH ND 1002023. LETTERS AND NUMERAL TO BE .06 HIGH.
9. SERIALIZE PER ND 1002023.
10. SECURE SCREWS USING ITEM (85)
11. SELECT AS REQUIRED.
12. SHIM TO FIT, PEEL OFF EXCESS SHIM STOCK.
13. MARK "DWG REV LTR _" AND APPLICABLE DRAWING REVISION LETTER PER ND 1002019, .12 HIGH, COLOR BLACK, IN LOCATION SHOWN.

## REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
|---|---|---|---|---|---|
| Z | | REPLACES REV. Y WITH CHANGE PER MXC 190732<br>REVISED PER TDR 08247 | | 31 JAN 64<br>12 MAY 64 | WK |
| AA | | CHANGE IN ACCORDANCE WITH MXC 190876 | | 10 FEB 64 | JJJ |
| AB | | CHANGE IN ACCORDANCE WITH MXC 190927 | | 10 FEB 64 | RLP |
| AC | | CHANGE IN ACCORDANCE WITH MXC 191381 | | 10 FEB 64 | RLP |
| AD | | CHANGE IN ACCORDANCE WITH MXC 191631 | | 11 FEB 64 | RLP |
| AE | | CHANGE IN ACCORDANCE WITH MXC 191978 08248 | | 12 MAY 64 | WK |
| AF | | CHANGE IN ACCORDANCE WITH CM 193091 | | 12 FEB 64 | JJJ |
| AG | | CHANGE IN ACCORDANCE WITH ECM 193456 PER TDRR 08249 | | 12 FEB 64<br>12 MAY 64 | JJJ<br>WK |
| AH | | CHANGE IN ACCORDANCE WITH CM 194151 | | 12 FEB 64 | RLP |
| AJ | | CHANGE IN ACCORDANCE WITH CM 194677<br>REVISED PER TDR 08250 | | 19 FEB 64<br>5-12 64 | RJF MEM<br>WK |
| AK | | CHANGE IN ACCORDANCE WITH CM 194681 | | 11 MAR 64 | MEM |
| AL | | CHANGE IN ACCORDANCE WITH CM 195168 PER TDRR 08251 | | 16 MAR 64<br>5 12 64 | MEM<br>WK |
| AM | | CHANGE IN ACCORDANCE WITH CM 195576 PER TDRR 08252 | | 26 MAR 64<br>5 12 64 | MEM<br>WK |
| (M) AN | | REVISION STATUS CHANGED PER CM 196491 TDRR 08253 | | 6 APR 64<br>5 12 64 | WK |
| AP | | CHANGE IN ACCORDANCE WITH CM 197010 TDRR 10243 | | 25 MAY 64 | MEM |
| AR | | CHANGE IN ACCORDANCE WITH CM 197477 TDRR 10764 | | 16 JUNE 64 | |
| AS | D2 B2 D5 | CHANGE IN ACCORDANCE WITH CM 197810 11161 | | 18 JUN 64 | GG FK |

| | 011 | EFFECTIVITY | ITEM NO | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|
| | 1 | | 100 | 1015869-540 | LIGHT, INDICATOR |
| SEE NOTE 3 | 1 | | 99 | 1016096-006 | RELAY, TIME DELAY |
| SEE NOTE 3 | 8 | | 98 | 1016005-1 | SHIM, SLIDE LOCATING |
| | 10 | | 97 | MS35216-27 | SCREW, PAN HEAD |
| | 8 | | 96 | MS35333-71 | WASHER, LOCK, INT. TOOTH |
| | 14 | | 95 | AN960C6 | (1897006-026) WASHER, FLAT |
| SEE NOTE 3 | 4 | | 94 | 1015981-005 | STANDOFF, HEX., THREADED |
| SEE NOTE 11 | 1 | | 93 | MS21919DG 13 THRU 15 | (1897073-113 THRU 115) CLAMP, CUSH |
| SEE NOTE 11 | 1 | | 92 | ↑ 11 ↑ 13 | ( ↑ 111 ↑ 113) ↑ ↑ |
| SEE NOTE 11 | 3 | | 91 | 9 11 | ( 109 111) |
| SEE NOTE 11 | 2 | | 90 | 8 10 | ( 108 110) |
| SEE NOTE 11 | 2 | | 89 | 7 9 | ( 107 109) |
| SEE NOTE 11 | 1 | | 88 | 6 8 | ( 106 108) |
| SEE NOTE 11 | 3 | | 87 | 5 7 | ( 105 107) |
| SEE NOTE 11 | 1 | | 86 | MS21919DG 3 THRU 5 | (1897073-103 THRU 105) CLAMP, CUSH |
| | AR | | 85 | MIL-S-40083-C130 | (ES-2544-5) SEALING COMPOUND |
| | 4 | | 84 | AN535-00-4 | (1897109-004) SCREW, DRIVE, RD. HD. |
| | 1 | | 83 | 1900614 | WIRING HARNESS B |
| | X | | 82 | PS 1900059 | PROCUREMENT SPECIFICATION |
| | 1 | | 81 | 1900615 | WIRE LIST B-B |
| SEE NOTE 3 | 1 | | 80 | 1016024-001 | RELAY, ARMATURE |
| | | | | MIL-F-14256 | FLUX (ES-2798, |
| | AR | | 78 | QQ-S-571 | FLUX TYPE AR (ES 2175 TYPE 1 OR 2 |
| | 1 | | 77 | 1901304-108 | NAMEPLATE, APOLLO, G&N |
| | AR | | 76 | QQ-S-571 | SOLDER SN60 (ES 2175 ALLOY 1) |
| | X | | 74 | 1900649 | SCHEMATIC DIAGRAM-ELEC |
| | 1 | | 73 | 1900616 | WIRE LIST A-A |
| | 1 | | 72 | 1900186 | WIRING HARNESS |
| | 22 | | 71 | AN363C632 | ↑ ↑ ↑ (1896990-261) |
| | 50 | | 70 | 1016151-004 | |
| | 4 | | 69 | AN363C1032 | NUT, SELF LOCKING (1896990-011) |
| | 4 | | 68 | ↑ -40 | ↑ ↑ ↑ |
| | 12 | | 67 | -26 | |
| | 20 | | 66 | -25 | |
| (AS) | 51 | | 65 | MS35216-24 | SCREW, PAN HEAD |
| | | | | | |
| SEE NOTE 3 | 4 | | 63 | 1006783-45 | ↑ BUTTON HEAD |
| SEE NOTE 3 | 8 | | 62 | 1006783-44 | BUTTON HEAD |
| SEE NOTE 3 | 8 | | 61 | 1015831-253 | SCREW, FLAT HEAD |
| SEE NOTE 3 | 12 | | 60 | 1015860-025 | SPACER |
| SEE NOTE 3 | 1 | | 59 | ↑ -108 | ↑ ↑ |
| SEE NOTE 3 | 1 | | 58 | -316 | |
| SEE NOTE 3 | 1 | | 57 | -704 | |
| SEE NOTE 3 | 1 | | 56 | -318 | |
| SEE NOTE 3 | 1 | | 55 | -705 | |
| SEE NOTE 3 | 1 | | 54 | -319 | |
| SEE NOTE 3 | 1 | | 53 | -706 | |
| SEE NOTE 3 | 1 | | 52 | -352 | |
| SEE NOTE 3 | 1 | | 51 | -707 | |
| SEE NOTE 3 | 1 | | 50 | -321 | |
| SEE NOTE 3 | 1 | | 49 | -708 | |
| SEE NOTE 3 | 1 | | 48 | -322 | |
| SEE NOTE 3 | 1 | | 47 | -709 | |
| SEE NOTE 3 | 1 | | 46 | -307 | |
| SEE NOTE 3 | 1 | | 45 | -710 | |
| SEE NOTE 3 | 1 | | 44 | -519 | |
| SEE NOTE 3 | 1 | | 43 | -333 | |
| SEE NOTE 3 | 1 | | 42 | -526 | |
| SEE NOTE 3 | 1 | | 41 | 1015869-317 | LIGHT, INDICATOR |
| SEE NOTE 3 | | | 40 | | |
| SEE NOTE 3 | 1 | | 39 | 1015869-719 | ↑ ↑ |
| SEE NOTE 3 | 1 | | 38 | 1015869-103 | LIGHT, INDICATOR |
| QUANTITY REQUIRED | | | | LIST OF PARTS AND MATERIALS | |

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. C1314 DATE 22 MAY 63

ITEM 36 REMAINS ON MASTER.

(Z) REPLACES REV Y WITH CHANGE

| | 011 | EFFECTIVITY | ITEM NO | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|
| (AS) SEE NOTE 3 | ~~1~~ | | ~~37~~ | ~~↑ -509~~ | ~~↑ ↑~~ |
| SEE NOTE 3 | ~~1~~ | | ~~36~~ | ~~-721~~ | |
| SEE NOTE 3 | ~~1~~ | | ~~35~~ | ~~-510~~ | |
| SEE NOTE 3 | 1 | | 34 | -722 | |
| SEE NOTE 3 | 1 | | 33 | -304 | |
| SEE NOTE 3 | 1 | | 32 | -511 | |
| SEE NOTE 3 | 1 | | 31 | -711 | |
| SEE NOTE 3 | 1 | | 30 | -503 | |
| SEE NOTE 3 | 1 | | 29 | 1015869-712 | LIGHT, INDICATOR |
| | 1 | | 28 | 1015869-537 | ↑ ↑ |
| (AS) | 4 | | 27 | 1015869-536 | LIGHT, INDICATOR |
| | 2 | | 26 | MS90078-7-1 | FUSE (1897077-107) |
| | 2 | | 25 | MS90078-12-1 | FUSE (1897077-112) |
| | 2 | | 24 | MS26572-1 | ↑ ↑ |
| SEE NOTE 3 | 1 | | 23 | 1015873-008 | |
| SEE NOTE 3 | 1 | | 22 | 1015873-001 | FUSE HOLDER |
| SEE NOTE 3 | 1 | | 21 | 1015992-001 | KNOB, POINTER |
| SEE NOTE 3 | 1 | | 20 | 1015993-001 | KNOB, LOCK |
| | 1 | | 19 | 1901321 | RESISTOR, VARIABLE |
| SEE NOTE 3 | 1 | | 18 | 1015994-001 | SWITCH, PUSH |
| SEE NOTE 3 | 1 | | 17 | 1015785-010 | SLIDE ASSEMBLY (L.H.) |
| SEE NOTE 3 | 1 | | 16 | 1015785-009 | SLIDE ASSEMBLY (R.H.) |
| SEE NOTE 3 | 10 | | 15 | 1015832-318 | RELAY, SENSITIVE |
| SEE NOTE 3 | 9 | | 14 | 1015802-004 | RELAY, ARMATURE |
| SEE NOTE 3 | 23 | | 13 | 1015837-001 | RELAY, ARMATURE |
| SEE NOTE 3 | 1 | | 12 | 1016096-002 | RELAY, TIME DELAY |
| SEE NOTE 3 | 1 | | 11 | 1016096-011 | RELAY, TIME DELAY |
| | | | | | |
| | | | | | |
| | | | | | |
| | 1 | | 7 | 1900233-011 | DIODE & RESISTOR BOARD ASSY |
| | 1 | | 6 | 1900672-011 | DIODE BOARD ASSEMBLY |
| | 1 | | 5 | 1900230 | BRACKET, MOUNTING (INSEP) ASSY |
| | 1 | | 4 | 1900229 | PLATE, MOUNTING RELAY (INSEP) ASSY |
| | 2 | | 3 | 1900015-051 | HANDLE ASSEMBLY |
| | 1 | | 2 | 1900228 | DRAWER (INSEP) ASSEMBLY |
| | 1 | | 1 | 1900227 | PANEL, FRONT |
| QUANTITY REQUIRED | | | | LIST OF PARTS AND MATERIALS | |

| SHEET 1 | SHEET 2 |
|---|---|
| AS | AS |
| AR | AR |
| AP | AP |
| AN | AN |
| AM | AM |
| AL | AL |
| AK | AJ |
| AJ | AJ |
| AH | AH |
| AG | AG |
| AF | AF |
| AE | AE |
| AD | AC |
| AC | AC |
| AB | Z |
| AA | Z |
| Z | Z |

REVISION STATUS OF SHEETS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900004-011 | 1900004-011 | -011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS9-497

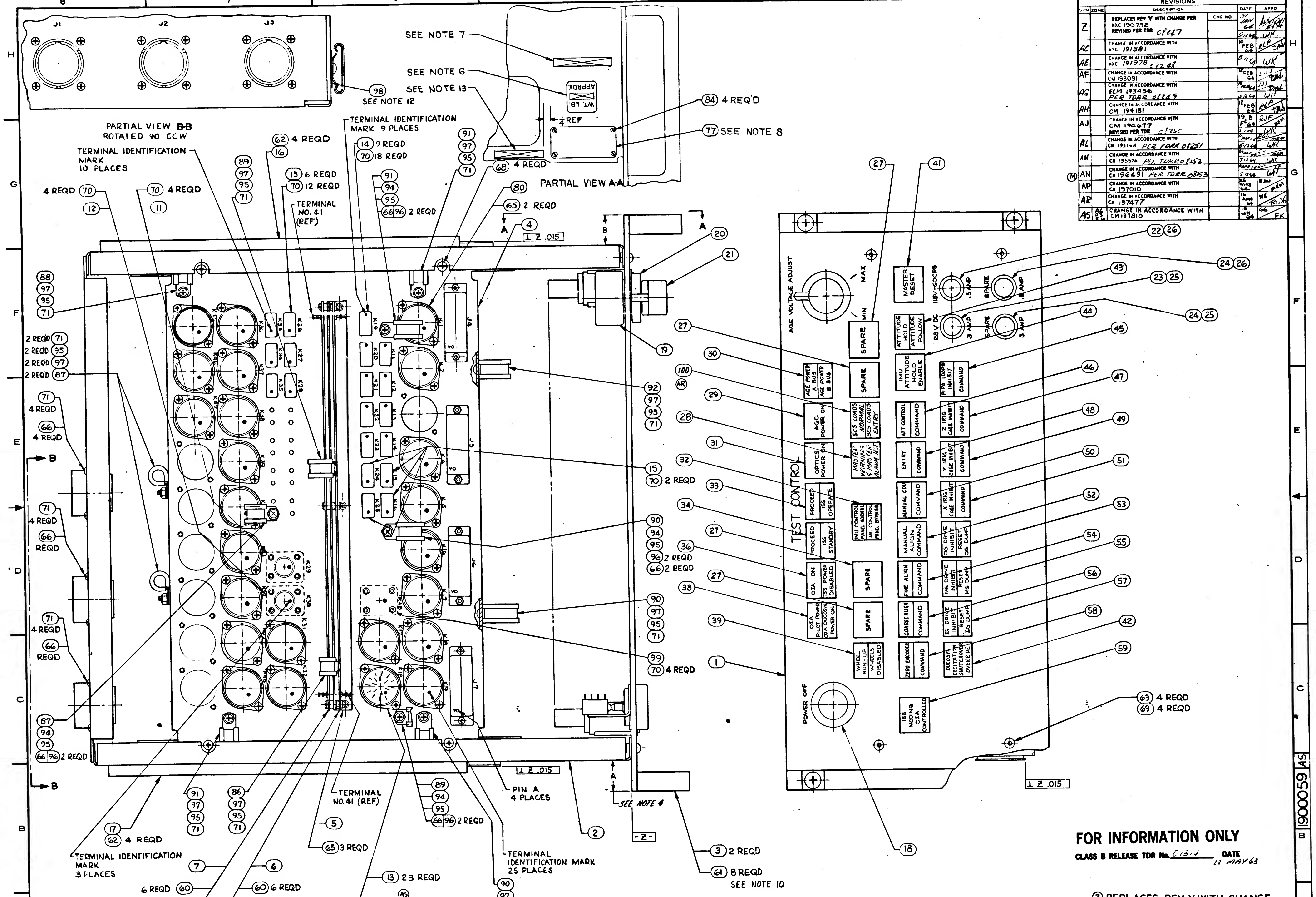
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN E. Miller DATE 14 JUN 63
CHECKED Ed Foster 25 JUN 63
APPROVAL 25 JUN 63
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TEST CONTROL
ASSEMBLY

CODE IDENT NO. SIZE E 1900059
SCALE FULL SHEET 1 OF 2

1900059 AS



## REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD |
|---|---|---|---|---|---|
| Z | | REPLACES REV. Y WITH CHANGE PER MXC 190732<br>REVISED PER TDR 08247 | | 31 JAN 64<br>5-12-64 | WK |
| AC | | CHANGE IN ACCORDANCE WITH MXC 191381 | | 10 FEB 64 | RLP |
| AE | | CHANGE IN ACCORDANCE WITH MXC 191978 08248 | | 5-12-64 | WK |
| AF | | CHANGE IN ACCORDANCE WITH CM 193091 | | 12 FEB 64 | JJJ |
| AG | | CHANGE IN ACCORDANCE WITH ECM 193456 PER TDRR 08249 | | 12 FEB 64<br>5-12-64 | JJJ<br>WK |
| AH | | CHANGE IN ACCORDANCE WITH CM 194151 | | 12 FEB 64 | RLP |
| AJ | | CHANGE IN ACCORDANCE WITH CM 194677<br>REVISED PER TDR 08250 | | 19 FEB 64<br>5-12-64 | RJF MEM<br>WK |
| AL | | CHANGE IN ACCORDANCE WITH CM 195168 PER TDRR 08251 | | 10 MAR 64<br>5-12-64 | RGL MEM<br>WK |
| AM | | CHANGE IN ACCORDANCE WITH CM 195576 PER TDRR 08252 | | 26 MAR 64<br>5-12-64 | KK MEM<br>WK |
| AN | | CHANGE IN ACCORDANCE WITH CM 196491 PER TDRR 08253 | | 6 APR 64<br>5-12-64 | RJL<br>WK |
| AP | | CHANGE IN ACCORDANCE WITH CM 197010 | | 25 MAY 64 | RJW MEM |
| AR | | CHANGE IN ACCORDANCE WITH CM 197477 | | 16 JUNE 64 | WK RWS |
| AS | A6 D3 E6 | CHANGE IN ACCORDANCE WITH CM 197810 | | 18 JUN 64 | GG FK |

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. C1314 DATE 22 MAY 63

Ⓩ REPLACES REV Y WITH CHANGE

| | |
|---|---|
| UNLESS OTHERWISE SPECIFIED<br>DIMENSIONS ARE IN INCHES<br>TOLERANCES ON | AC SPARK PLUG DIVISION, GMC<br>MILWAUKEE, WISCONSIN |
| FRACTIONS ± — DECIMALS ± — ANGLES ± — | ACSP PN |
| DO NOT SCALE THIS DRAWING | DRAWN E. Miller DATE 19 JUN 63 |
| MATERIAL — | CHECKED Ed Foster 25 JUN 63 |
| CONTRACT | APPROVAL 25 JUN 63 |
| | APPROVAL 5/6/63 |
| | NASA APPROVAL |
| | MIT APPROVAL 13 May 64 |

NEXT ASSY | USED ON

APPLICATION

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

# TEST CONTROL
ASSEMBLY

CODE IDENT NO | SIZE E | 1900059

SCALE FULL | SHEET 2 OF 2

1900059 AS

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. SOLDER PER MIL-S-6872 (ES-2505-1 TYPE 2 FLUX) USING ITEMS 76 AND 78.
3. VENDOR ITEM - SEE SPEC CONTROL DRAWING.
4. DIMENSION "A" MUST BE EQUAL TO DIMENSION "B" WITHIN .040.
5. DRAWER SLIDE MOUNTING SCREWS AND FRONT PANEL MOUNTING SCREWS SHALL BE SUBJECTED TO TORQUE OF 37-40 IN/LBS AT INSTALLATION.
6. MARK WEIGHT OF ASSEMBLY, (33 LBS), PER ND1002123 ADJACENT TO NAMEPLATE LOCATION.
7. MARK "SCHEM AND APPLICABLE SCHEMATIC DRAWING NUMBER PER ND 1002019, .12 HIGH, COLOR BLACK.
8. MARK APPLICABLE CONTRACT NUMBER AND SERIAL NUMBER TO ITEM 77 IN ACCORDANCE WITH ND 1002023. LETTERS AND NUMERAL TO BE .06 HIGH.
9. SERIALIZE PER ND 1002023.
10. SECURE SCREWS USING ITEM (85)
11. SELECT AS REQUIRED.
12. SHIM TO FIT, PEEL OFF EXCESS SHIM STOCK.
13. MARK "DWG REV LTR _" AND APPLICABLE DRAWING REVISION LETTER PER ND 1002019, .12 HIGH, COLOR BLACK, IN LOCATION SHOWN.

## REVISIONS

| | SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
|---|---|---|---|---|---|---|
| | Z | | REPLACES REV. Y WITH CHANGE PER MXC 190732<br>REVISED PER TDR 08247 | | 31 JAN 64<br>12 MAY 64 | ALK<br>WK |
| | AA | | CHANGE IN ACCORDANCE WITH MXC 190876 | | 10 FEB 64 | JJJ |
| | AB | | CHANGE IN ACCORDANCE WITH MXC 190927 | | 10 FEB 64 | RLP |
| | AC | | CHANGE IN ACCORDANCE WITH MXC 191381 | | 10 FEB 64 | RLP |
| | AD | | CHANGE IN ACCORDANCE WITH MXC 191631 | | 11 FEB 64 | RLP |
| | AE | | CHANGE IN ACCORDANCE WITH MXC 191978 08248 | | 12 MAY 64 | WK |
| | AF | | CHANGE IN ACCORDANCE WITH CM 193091 | | 12 FEB 64 | JJJ |
| | AG | | CHANGE IN ACCORDANCE WITH ECM 193456 PER TDRR 08249 | | 12 FEB 64<br>12 MAY 64 | JJJ<br>WK |
| | AH | | CHANGE IN ACCORDANCE WITH CM 194151 | | 12 FEB 64 | RLP |
| | AJ | | CHANGE IN ACCORDANCE WITH CM 194677<br>REVISED PER TDR 08250 | | 19 FEB 64<br>5-12 64 | RJF MEM<br>WK |
| | AK | | CHANGE IN ACCORDANCE WITH CM 194681 | | 11 MAR 64 | R.R. MEM |
| | AL | | CHANGE IN ACCORDANCE WITH CM 195168 PER TDRR 08251 | | 16 MAR 64<br>5 12 64 | RGL MEM<br>WK |
| | AM | | CHANGE IN ACCORDANCE WITH CM 195576 PER TDRR 08252 | | 26 MAR 64<br>5 12 64 | RR MEM<br>WK |
| Ⓜ | AN | | REVISION STATUS CHANGED PER CM 196491 TDRR 08253 | | 6 APR 64<br>5-12 64 | RJL EE<br>WK |
| Ⓜ | AP | | CHANGE IN ACCORDANCE WITH CM 197010 TDRR 10243 | | 25 MAY 64 | RJW MEM |
| Ⓜ | AR | | CHANGE IN ACCORDANCE WITH CM 197477 TDRR 10764 | | 16 JUNE 64 | MK RWH |
| Ⓜ | AS | D2<br>B2<br>D5 | CHANGE IN ACCORDANCE WITH CM 197810 TDRR 11161 | | 18 JUN 64 | GG FK |
| | AT | | REVISED PER TDRR 11367 | | 18 AUG 64 | JWP |

## LIST OF PARTS AND MATERIALS

| | QUANTITY REQUIRED | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | 011 | EFFECTIVITY | ITEM NO | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| | | | | 1 | | 100 | 1015869-540 | LIGHT, INDICATOR |
| SEE NOTE 3 | | | | 1 | | 99 | 1016096-006 | RELAY, TIME DELAY |
| SEE NOTE 3 | | | | 8 | | 98 | 1016005-1 | SHIM, SLIDE LOCATING |
| | | | | 10 | | 97 | MS35216-27 | SCREW, PAN HEAD |
| | | | | 8 | | 96 | MS35333-71 | WASHER, LOCK, INT. TOOTH |
| | | | | 14 | | 95 | AN960C6 | (1897006-026) WASHER, FLAT |
| SEE NOTE 3 | | | | 4 | | 94 | 1015981-005 | STANDOFF, HEX., THREADED |
| SEE NOTE 11 | | | | 1 | | 93 | MS21919DG13 THRU 15 | (1897073-113 THRU 115) CLAMP, CUSH |
| SEE NOTE 11 | | | | 1 | | 92 | ↑ 11 ↑ 13 | ( ↑ 111 ↑ 113) ↑ ↑ |
| SEE NOTE 11 | | | | 3 | | 91 | 9 11 | ( 109 111) |
| SEE NOTE 11 | | | | 2 | | 90 | 8 10 | ( 108 110) |
| SEE NOTE 11 | | | | 2 | | 89 | 7 9 | ( 107 109) |
| SEE NOTE 11 | | | | 1 | | 88 | 6 8 | ( 106 108) |
| SEE NOTE 11 | | | | 3 | | 87 | ↓ 5 ↓ 7 | ( ↓ 105 ↓ 107) ↓ ↓ |
| SEE NOTE 11 | | | | 1 | | 86 | MS21919DG 3 THRU 5 | (1897073-103 THRU 105) CLAMP, CUSH |
| | | | | AR | | 85 | MIL-S-40083-C130 | (ES-2544-5) SEALING COMPOUND |
| | | | | 4 | | 84 | AN535-00-4 | (1897109-004) SCREW, DRIVE, RD. HD. |
| | | | | 1 | | 83 | 1900614 | WIRING HARNESS B |
| | | | | X | | 82 | PS 1900059 | PROCUREMENT SPECIFICATION |
| | | | | 1 | | 81 | 1900615 | WIRE LIST B-B |
| SEE NOTE 3 | | | | 1 | | 80 | 1016024-001 | RELAY, ARMATURE |
| | | | | | | | MIL-F-14256 | FLUX (ES-2798) |
| | | | | AR | | 78 | QQ-S-571 | FLUX TYPE AR (ES 2175 TYPE 1 OR 2 |
| | | | | 1 | | 77 | 1901304-108 | NAMEPLATE, APOLLO, G&N |
| | | | | AR | | 76 | QQ-S-571 | SOLDER, SN60 (ES 2175 ALLOY 1) |
| | | | | X | | 74 | 1900649 | SCHEMATIC DIAGRAM-ELEC |
| | | | | 1 | | 73 | 1900616 | WIRE LIST A-A |
| | | | | 1 | | 72 | 1900186 | WIRING HARNESS |
| | | | | 22 | | 71 | AN363C632 | ↑ ↑ ↑ (1896990-261) |
| | | | | 50 | | 70 | 1016151-004 | |
| | | | | 4 | | 69 | AN363C1032 | NUT, SELF LOCKING (1896990-011) |
| | | | | 4 | | 68 | ↑ -40 | ↑ ↑ ↑ |
| | | | | 12 | | 67 | -26 | |
| | | | | 20 | | 66 | -25 | |
| (AS) | | | | 51 | | 65 | MS35216-24 | SCREW, PAN HEAD |
| | | | | | | | | |
| SEE NOTE 3 | | | | 4 | | 63 | 1006783-45 | ↑ BUTTON HEAD |
| SEE NOTE 3 | | | | 8 | | 62 | 1006783-44 | BUTTON HEAD |
| SEE NOTE 3 | | | | 8 | | 61 | AN507C832R12 | (1897003-568) SCREW, FLAT HEAD |
| SEE NOTE 3 | | | | 12 | | 60 | 1015860-025 | SPACER |
| SEE NOTE 3 | | | | 1 | | 59 | ↑ -108 | ↑ ↑ |
| SEE NOTE 3 | | | | 1 | | 58 | -316 | |
| SEE NOTE 3 | | | | 1 | | 57 | -704 | |
| SEE NOTE 3 | | | | 1 | | 56 | -318 | |
| SEE NOTE 3 | | | | 1 | | 55 | -705 | |
| SEE NOTE 3 | | | | 1 | | 54 | -319 | |
| SEE NOTE 3 | | | | 1 | | 53 | -706 | |
| SEE NOTE 3 | | | | 1 | | 52 | -352 | |
| SEE NOTE 3 | | | | 1 | | 51 | -707 | |
| SEE NOTE 3 | | | | 1 | | 50 | -321 | |
| SEE NOTE 3 | | | | 1 | | 49 | -708 | |
| SEE NOTE 3 | | | | 1 | | 48 | -322 | |
| SEE NOTE 3 | | | | 1 | | 47 | -709 | |
| SEE NOTE 3 | | | | 1 | | 46 | -307 | |
| SEE NOTE 3 | | | | 1 | | 45 | -710 | |
| SEE NOTE 3 | | | | 1 | | 44 | -519 | |
| SEE NOTE 3 | | | | 1 | | 43 | -333 | |
| SEE NOTE 3 | | | | 1 | | 42 | -526 | |
| SEE NOTE 3 | | | | 1 | | 41 | 1015869-317 | LIGHT, INDICATOR |
| SEE NOTE 3 | | | | | | 40 | | |
| SEE NOTE 3 | | | | 1 | | 39 | 1015869-719 | ↑ ↑ |
| SEE NOTE 3 | | | | 1 | | 38 | 1015869-103 | LIGHT, INDICATOR |

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 01314 DATE 22 MAY 63

Ⓩ REPLACES REV Y WITH CHANGE

| | QUANTITY REQUIRED | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | 011 | EFFECTIVITY | ITEM NO | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| (AS) SEE NOTE 3 | | | | ~~1~~ | | ~~37~~ | ~~-509~~ | ↑ ↑ |
| SEE NOTE 3 | | | | 1 | | 36 | -721 | |
| SEE NOTE 3 | | | | ~~1~~ | | ~~35~~ | ~~-510~~ | |
| SEE NOTE 3 | | | | 1 | | 34 | -722 | |
| SEE NOTE 3 | | | | 1 | | 33 | -304 | |
| SEE NOTE 3 | | | | 1 | | 32 | -511 | |
| SEE NOTE 3 | | | | 1 | | 31 | -711 | |
| SEE NOTE 3 | | | | 1 | | 30 | -503 | |
| SEE NOTE 3 | | | | 1 | | 29 | 1015869-712 | LIGHT, INDICATOR |
| | | | | 1 | | 28 | 1015869-537 | ↑ ↑ |
| (AS) | | | | 4 | | 27 | 1015869-536 | LIGHT, INDICATOR |
| | | | | 2 | | 26 | MS90078-7-1 | FUSE (1897077-107) |
| | | | | 2 | | 25 | MS90078-12-1 | FUSE (1897077-112) |
| | | | | 2 | | 24 | MS26572-1 | ↑ ↑ |
| SEE NOTE 3 | | | | 1 | | 23 | 1015873-008 | |
| SEE NOTE 3 | | | | 1 | | 22 | 1015873-001 | FUSE HOLDER |
| SEE NOTE 3 | | | | 1 | | 21 | 1015992-001 | KNOB, POINTER |
| SEE NOTE 3 | | | | 1 | | 20 | 1015993-001 | KNOB, LOCK |
| | | | | 1 | | 19 | 1901321 | RESISTOR, VARIABLE |
| SEE NOTE 3 | | | | 1 | | 18 | 1015994-001 | SWITCH, PUSH |
| SEE NOTE 3 | | | | 1 | | 17 | 1015785-010 | SLIDE ASSEMBLY (L.H.) |
| SEE NOTE 3 | | | | 1 | | 16 | 1015785-009 | SLIDE ASSEMBLY (R.H.) |
| SEE NOTE 3 | | | | 10 | | 15 | 1015832-318 | RELAY, SENSITIVE |
| SEE NOTE 3 | | | | 9 | | 14 | 1015802-004 | RELAY, ARMATURE |
| SEE NOTE 3 | | | | 23 | | 13 | 1015837-001 | RELAY, ARMATURE |
| SEE NOTE 3 | | | | 1 | | 12 | 1016096-002 | RELAY, TIME DELAY |
| SEE NOTE 3 | | | | 1 | | 11 | 1016096-011 | RELAY, TIME DELAY |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | 1 | | 7 | 1900233-011 | DIODE & RESISTOR BOARD ASSY |
| | | | | 1 | | 6 | 1900672-011 | DIODE BOARD ASSEMBLY |
| | | | | 1 | | 5 | 1900230 | BRACKET, MOUNTING (INSEP) ASSY |
| | | | | 1 | | 4 | 1900229 | PLATE, MOUNTING RELAY (INSEP) ASSY |
| | | | | 2 | | 3 | 1900015-051 | HANDLE ASSEMBLY |
| | | | | 1 | | 2 | 1900228 | DRAWER (INSEP) ASSEMBLY |
| | | | | 1 | | 1 | 1900227 | PANEL, FRONT |

| SHEET 1 | SHEET 2 |
|---|---|
| AT | AS |
| AS | AS |
| AR | AR |
| AP | AP |
| AN | AN |
| AM | AM |
| AL | AL |
| AK | AJ |
| AJ | AJ |
| AH | AH |
| AG | AG |
| AF | AF |
| AE | AE |
| AD | AC |
| AC | AC |
| AB | Z |
| AA | Z |
| Z | Z |

REVISION STATUS OF SHEETS

| APPLICATION | | |
|---|---|---|
| NEXT ASSY | USED ON | APPLICABLE DASH NO |
| 1900004-011 | 1900004-011 | -011 |

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE WISCONSIN
ACSP PN
DRAWN E. Miller DATE 14 JUN 63
CHECKED Ed Foster 25 JUN 63
APPROVAL 25 JUN 63
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

TEST CONTROL ASSEMBLY

CODE IDENT NO
SIZE E
1900059
SCALE FULL
SHEET 1 OF 2

1900059AT

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. SOLDER PER MIL-S-6872 (ES-2505-1 TYPE 2 FLUX) USING ITEMS 76 AND 78.
3. VENDOR ITEM - SEE SPEC CONTROL DRAWING.
4. DIMENSION "A" MUST BE EQUAL TO DIMENSION "B" WITHIN .040.
5. DRAWER SLIDE MOUNTING SCREWS AND FRONT PANEL MOUNTING SCREWS SHALL BE SUBJECTED TO TORQUE OF 37-40 IN/LBS AT INSTALLATION.
6. MARK WEIGHT OF ASSEMBLY, (33 LBS), PER ND 1002123 ADJACENT TO NAMEPLATE LOCATION.
7. MARK "SCHEM" AND APPLICABLE SCHEMATIC DRAWING NUMBER PER ND 1002019, .12 HIGH, COLOR BLACK.
8. MARK APPLICABLE CONTRACT NUMBER AND SERIAL NUMBER TO ITEM 77 IN ACCORDANCE WITH ND 1002023. LETTERS AND NUMERAL TO BE .06 HIGH.
9. SERIALIZE PER ND 1002023.
10. SECURE SCREWS USING ITEM (85)
11. SELECT AS REQUIRED.
12. SHIM TO FIT, PEEL OFF EXCESS SHIM STOCK.
13. MARK "DWG REV LTR _" AND APPLICABLE DRAWING REVISION LETTER PER ND 1002019. .12 HIGH, COLOR BLACK, IN LOCATION SHOWN.
14. (AU) OMIT THIS PART FOR THE -011 CONFIGURATION.

| | 021 | 011 | EFFECTIVITY | ITEM NO | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|
| SEE NOTE 3 | 8 | | | 104 | 1015831-253 | SCREW, FLAT HEAD |
| | 1 | | | 103 | ↑ -727 | ↑ ↑ |
| | 1 | | | 102 | -728 | |
| | 1 | | | 101 | -729 | |
| | 1 | 1 | | 100 | 1015869-540 | LIGHT, INDICATOR |
| | 1 | 1 | | 99 | 1016096-006 | RELAY, TIME DELAY |
| | 8 | 8 | | 98 | 1016005-1 | SHIM, SLIDE LOCATING |
| | 10 | 10 | | 97 | MS35216-27 | SCREW, PAN HEAD |
| | 8 | 8 | | 96 | MS35333-71 | WASHER, LOCK, INT TOOTH |
| | 14 | 14 | | 95 | AN960C6 | (1897006-026) WASHER, FLAT |
| SEE NOTE 3 | 4 | 4 | | 94 | 1015981-005 | STANDOFF, HEX., THREADED |
| SEE NOTE 11 | 1 | 1 | | 93 | MS21919DG13 THRU 15 | (1897073-113 THRU 115) CLAMP, CUSH |
| | 1 | 1 | | 92 | ↑ 11 ↑ 13 | ( ↑ 111 ↑ 113) ↑ ↑ |
| | 3 | 3 | | 91 | 9 11 | ( 109 111) |
| | 2 | 2 | | 90 | 8 10 | ( 108 110) |
| | 2 | 2 | | 89 | 7 9 | ( 107 109) |
| | 1 | 1 | | 88 | 6 8 | ( 106 108) |
| | 3 | 3 | | 87 | 5 7 | ( 105 107) |
| | 1 | 1 | | 86 | MS21919DG 3 THRU 5 | (1897073-103 THRU 105) CLAMP, CUSH |
| | AR | AR | | 85 | MIL-S-40083-C130 | (ES-2544-5) SEALING COMPOUND |
| | 4 | 4 | | 84 | AN535-00-4 | (1897109-004) SCREW, DRIVE, RD. HD. |
| | 1 | 1 | | 83 | 1900614 | WIRING HARNESS B |
| | X | X | | 82 | PS 1900059 | PROCUREMENT SPECIFICATION |
| | 1 | 1 | | 81 | 1900615 | WIRE LIST B-B |
| SEE NOTE 3 | 1 | 1 | | 80 | 1016024-001 | RELAY, ARMATURE |
| | | | | | MIL-F-14256 | FLUX (ES-2798, |
| | AR | AR | | 78 | QQ-S-571 | FLUX TYPE AR (ES 2175 TYPE 1 OR 2 |
| | | 1 | | 77 | 1901304-108 | NAMEPLATE, APOLLO, G&N |
| | AR | AR | | 76 | QQ-S-571 | SOLDER, SN60 (ES 2175 ALLOY 1) |
| | X | X | | 74 | 1900649 | SCHEMATIC DIAGRAM-ELEC |
| | 1 | 1 | | 73 | 1900616 | WIRE LIST A-A |
| | 1 | 1 | | 72 | 1900186 | WIRING HARNESS |
| | 22 | 22 | | 71 | AN363C632 | ↑ ↑ ↑ (1896990-261) |
| | 50 | 50 | | 70 | 1016151-004 | |
| | 4 | 4 | | 69 | AN363C1032 | NUT, SELF LOCKING (1896990-011) |
| | 4 | 4 | | 68 | ↑ -40 | ↑ ↑ ↑ |
| | 12 | 12 | | 67 | -26 | |
| | 20 | 20 | | 66 | -25 | |
| | 51 | 51 | | 65 | MS35216-24 | SCREW, PAN HEAD |
| | | | | | | |
| SEE NOTE 3 | 4 | 4 | | 63 | 1006783-45 | ↑ BUTTON HEAD |
| | 8 | 8 | | 62 | 1006783-44 | BUTTON HEAD |
| | | 8 | | 61 | AN507C832R12 | (1897003-568) SCREW, FLAT HEAD |
| | 12 | 12 | | 60 | 1015860-025 | SPACER |
| | 1 | 1 | | 59 | ↑ -108 | ↑ ↑ |
| | 1 | 1 | | 58 | -316 | |
| | 1 | 1 | | 57 | -704 | |
| | 1 | 1 | | 56 | -318 | |
| | 1 | 1 | | 55 | -705 | |
| | 1 | 1 | | 54 | -319 | |
| | 1 | 1 | | 53 | -706 | |
| | 1 | 1 | | 52 | -352 | |
| | | 1 | | 51 | -707 | |
| | 1 | 1 | | 50 | -321 | |
| | | 1 | | 49 | -708 | |
| | 1 | 1 | | 48 | -322 | |
| | | 1 | | 47 | -709 | |
| | 1 | 1 | | 46 | -307 | |
| | 1 | 1 | | 45 | -710 | |
| | 1 | 1 | | 44 | -519 | |
| | 1 | 1 | | 43 | -333 | |
| | 1 | 1 | | 42 | -526 | |
| | 1 | 1 | | 41 | 1015869-317 | LIGHT, INDICATOR |
| | 1 | | | 40 | 1901304-149 | NAMEPLATE, APOLLO, G&N |
| | 1 | 1 | | 39 | 1015869-719 | ↑ ↑ |
| | 1 | 1 | | 38 | 1015869-103 | LIGHT, INDICATOR |

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
|---|---|---|---|---|---|
| REVISIONS | | | | | |
| Z | | REPLACES REV. Y WITH CHANGE PER MXC 190732<br>REVISED PER TDR 08247 | | 31 JAN 64<br>12 MAY 64 | WK |
| AA | | CHANGE IN ACCORDANCE WITH MXC 190876 | | 10 FEB 64 | JJJ |
| AB | | CHANGE IN ACCORDANCE WITH MXC 190927 | | 10 FEB 64 | RLP |
| AC | | CHANGE IN ACCORDANCE WITH MXC 191381 | | 10 FEB 64 | RLP |
| AD | | CHANGE IN ACCORDANCE WITH MXC 191631 | | 11 FEB 64 | RLP |
| AE | | CHANGE IN ACCORDANCE WITH MXC 191978 08248 | | 12 MAY 64 | WK |
| AF | | CHANGE IN ACCORDANCE WITH CM 193091 | | 12 FEB 64 | JJJ |
| AG | | CHANGE IN ACCORDANCE WITH ECM 193456 PER TDRR 08249 | | 12 FEB 64<br>12 MAY 64 | JJJ<br>WK |
| AH | | CHANGE IN ACCORDANCE WITH CM 194151 | | 12 FEB 64 | RLP |
| AJ | | CHANGE IN ACCORDANCE WITH CM 194677<br>REVISED PER TDR 08250 | | 19 FEB 64<br>5 12 64 | RJF MEM<br>WK |
| AK | | CHANGE IN ACCORDANCE WITH CM 194681 | | 11 MAR 64 | RL MEM |
| AL | | CHANGE IN ACCORDANCE WITH CM 195168 PER TDRR 08251 | | MAR 64<br>5 12 64 | RGL MEM<br>WK |
| AM | | CHANGE IN ACCORDANCE WITH CM 195576 PER TDRR 08252 | | 26 MAR 64<br>5 12 64 | RK MEM<br>WK |
| Ⓜ AN | | REVISION STATUS CHANGED PER CM 196491 TDRR 08253 | | 6 APR 64<br>5 12 64 | RL<br>WK |
| Ⓜ AP | | CHANGE IN ACCORDANCE WITH CM 197010 TDRR 10243 | | 25 MAY 64 | RJW MEM |
| Ⓜ AR | | CHANGE IN ACCORDANCE WITH CM 197477 TDRR 10764 | | 16 JUNE 64 | AK RWK |
| Ⓜ AS | D2<br>B2<br>D5 | CHANGE IN ACCORDANCE WITH CM 197810 TDRR 11161 | | 18 JUN 64 | GG FK |
| AT | | REVISED PER TDRR 11367 | | 11 AUG 64 | JWP |
| AU | | CHANGE IN ACCORDANCE WITH CM 199819 TDRR 14924 | | 27 AUG 64 | JJJ W.D. |

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. C1314 DATE 22 MAY 63

Ⓩ REPLACES REV Y WITH CHANGE

| | 021 | 011 | EFFECTIVITY | ITEM NO | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|
| SEE NOTE 3 | ~~1~~ | ~~1~~ | | ~~37~~ | ↑ ~~-509~~ | ↑ ↑ |
| | 1 | 1 | | 36 | -721 | |
| | ~~1~~ | ~~1~~ | | ~~35~~ | ~~-510~~ | |
| | 1 | 1 | | 34 | -722 | |
| | 1 | 1 | | 33 | -304 | |
| | 1 | 1 | | 32 | -511 | |
| | 1 | 1 | | 31 | -711 | |
| | 1 | 1 | | 30 | -503 | |
| | 1 | 1 | | 29 | 1015869-712 | LIGHT, INDICATOR |
| | 1 | 1 | | 28 | 1015869-537 | ↑ ↑ |
| | 4 | 4 | | 27 | 1015869-536 | LIGHT, INDICATOR |
| | 2 | 2 | | 26 | MS90078-7-1 | FUSE (1897077-107) |
| | 2 | 2 | | 25 | MS90078-12-1 | FUSE (1897077-112) |
| | 2 | 2 | | 24 | MS26572-1 | ↑ ↑ |
| SEE NOTE 3 | 1 | 1 | | 23 | 1015873-008 | |
| SEE NOTE 3 | 1 | 1 | | 22 | 1015873-001 | FUSE HOLDER |
| SEE NOTE 3 | 1 | 1 | | 21 | 1015992-001 | KNOB, POINTER |
| SEE NOTE 3 | 1 | 1 | | 20 | 1015993-001 | KNOB, LOCK |
| | 1 | 1 | | 19 | 1901321 | RESISTOR, VARIABLE |
| SEE NOTE 3 | 1 | 1 | | 18 | 1015994-001 | SWITCH, PUSH |
| | 1 | 1 | | 17 | 1015785-010 | SLIDE ASSEMBLY (L.H.) |
| | 1 | 1 | | 16 | 1015785-009 | SLIDE ASSEMBLY (R.H.) |
| | 10 | 10 | | 15 | 1015832-318 | RELAY, SENSITIVE |
| | 9 | 9 | | 14 | 1015802-004 | RELAY, ARMATURE |
| | 23 | 23 | | 13 | 1015837-001 | RELAY, ARMATURE |
| | 1 | 1 | | 12 | 1016096-002 | RELAY, TIME DELAY |
| | 1 | 1 | | 11 | 1016096-011 | RELAY, TIME DELAY |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | 1 | 1 | | 7 | 1900233-011 | DIODE & RESISTOR BOARD ASSY |
| | 1 | 1 | | 6 | 1900672-011 | DIODE BOARD ASSEMBLY |
| | 1 | 1 | | 5 | 1900230 | BRACKET, MOUNTING (INSEP) ASSY |
| | 1 | 1 | | 4 | 1900229 | PLATE, MOUNTING RELAY (INSEP) ASSY |
| | 2 | 2 | | 3 | 1900015-051 | HANDLE ASSEMBLY |
| | 1 | 1 | | 2 | 1900228 | DRAWER (INSEP) ASSEMBLY |
| | 1 | 1 | | 1 | 1900227 | PANEL, FRONT |

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

| SHEET 1 | SHEET 2 |
|---|---|
| AU | AU |
| AT | AS |
| AS | AS |
| AR | AR |
| AP | AP |
| AN | AN |
| AM | AM |
| AL | AL |
| AK | AJ |
| AJ | AJ |
| AH | AH |
| AG | AG |
| AF | AF |
| AE | AE |
| AD | AC |
| AC | AC |
| AB | Z |
| AA | Z |
| Z | Z |

REVISION STATUS OF SHEETS

| NEXT ASSY | USED ON | APPLICABLE DASH NO |
|---|---|---|
| 1900004-021 | 1900004-021 | -021 |
| 1900004-011 | 1900004-011 | -011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE WISCONSIN
ACSP PN
DRAWN E. Miller DATE 14 JUN 63
CHECKED Ed Foster 25 JUN 63
APPROVAL 25 JUN 63
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TEST CONTROL
ASSEMBLY

CODE IDENT NO
SIZE E
1900059
SCALE FULL
SHEET 1 OF 2

1900059 AU

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. SOLDER PER MIL-S-6872 (ES-2505-1 TYPE 2 FLUX) USING ITEMS 76 AND 78.
3. VENDOR ITEM - SEE SPEC CONTROL DRAWING.
4. PANEL AND CHASSIS TO BE CENTRALIZED WITHIN .010.
5. DRAWER SLIDE MOUNTING SCREWS AND FRONT PANEL MOUNTING SCREWS SHALL BE SUBJECTED TO TORQUE OF 37-40 LB/IN AT INSTALLATION.
6. MARK WEIGHT OF ASSEMBLY PER ND- ADJACENT TO NAMEPLATE LOCATION.

REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD |
|---|---|---|---|---|---|
| E | | *REPLACES REVISION "D" WITH CHANGE PER MXC 37820 WAS SH 1 OF 1 "D SIZE".* | | 9 JUL 63 | |
| F | | CHANGE IN ACCORDANCE WITH MXC-187965 | | 16 AUG 63 | |
| G | | CHANGE IN ACCORDANCE WITH MXC-188068 | | | |
| – | – | REVISED CUSTOMER DATA (V10-62 | | | |
| | | INCORPORATES CHANGES F&G PER TDRR 02377 | | | |
| H | | CHANGE IN ACCORDANCE WITH MXC 188187 | | 17 SEP 63 | |
| J | | *CHANGE IN ACCORDANCE WITH MXC 188861* | | 18 SEP 63 | C.M.K. |
| K | | *CHANGE IN ACCORDANCE WITH MXC 189123* | | 18 SEP 63 | C.M.K. |
| L | | *CHANGE IN ACCORDANCE WITH MXC 189521* | | 19 SEP 63 | C.M.K. |
| M | | *CHANGE IN ACCORDANCE WITH MXC 189584 PER TDRR 03723* | 3 OCT 63 WK | 20 SEP 63 | C.M.K. |

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01314 DATE 22 May 63

*(E) REPLACES REVISION "D" WITH CHANGE PER MXC 187820 WAS SH 1 OF 1 "D SIZE"*

| | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|
| | 1 | | 80 | *1016024-001* | *RELAY, ARMATURE* |
| | 1 | | 79 | *1015869-529* | *LIGHT, INDICATOR* |
| | AR | | 78 | AR | FLUX |
| | 1 | | 77 | | NAMEPLATE |
| | AR | | 76 | SN60 | SOLDER |
| | X | | 74 | | SCHEMATIC DIAGRAM-ELEC |
| | 1 | | 73 | | WIRE LIST |
| | 1 | | 72 | 1900186 | WIRING HARNESS |
| | 12 | | 71 | AN363C632 | ↑ ↑ ↑ |
| | 48 | | 70 | MS20365D440 | |
| | 4 | | 69 | AN363C1032 | NUT, SELF LOCKING |
| | 4 | | 68 | ↑ -39 | ↑ ↑ ↑ |
| | 12 | | 67 | -26 | |
| | 12 | | 66 | -25 | |
| | 49 | | 65 | MS35216-24 | SCREW, PAN HEAD |
| SEE NOTE 3 | 4 | | 63 | 1006783-45 | ↑ BUTTON HEAD |
| | 8 | | 62 | 1006783-44 | BUTTON HEAD |
| | 8 | | 61 | 1015831-257 | SCREW, FLAT HEAD |
| | 12 | | 60 | | SPACER |
| | 1 | | 59 | ↑ -108 | ↑ ↑ |
| | 1 | | 58 | -316 | |
| | 1 | | 57 | -704 | |
| | 1 | | 56 | -318 | |
| | 1 | | 55 | -705 | |
| | 1 | | 54 | -319 | |
| | 1 | | 53 | -706 | |
| | 1 | | 52 | -320 | |
| | 1 | | 51 | -707 | |
| | 1 | | 50 | -321 | |
| | 1 | | 49 | -708 | |
| | 1 | | 48 | -322 | |
| | 1 | | 47 | -709 | |
| | 1 | | 46 | -307 | |
| | 1 | | 45 | -710 | |
| | 1 | | 44 | -519 | |
| | 1 | | 43 | -338 | |
| | 1 | | 42 | -526 | |
| | 1 | | 41 | -317 | |
| | 1 | | 40 | 1015869-527 | |
| | 1 | | 39 | 1015869-719 | |
| | 1 | | 38 | 1015869-103 | LIGHT, INDICATOR |

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

| | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|
| SEE NOTE 3 | 1 | | 37 | ↑ -509 | ↑ ↑ |
| | 1 | | 36 | -302 | |
| | 1 | | 35 | -510 | |
| | 1 | | 34 | -303 | |
| | 1 | | 33 | -304 | |
| | 1 | | 32 | -511 | |
| | 1 | | 31 | -711 | |
| | 1 | | 30 | -503 | |
| | 1 | | 29 | -712 | |
| | 1 | | 28 | -504 | |
| | 1 | | 27 | 1015869-528 | LIGHT, INDICATOR |
| | 2 | | 26 | MS90078-7-1 | FUSE |
| | 2 | | 25 | MS90078-12-1 | FUSE |
| | 2 | | 24 | MS26572-1 | ↑ ↑ |
| SEE NOTE 3 | 1 | | 23 | 1015873-008 | |
| SEE NOTE 3 | 1 | | 22 | 1015873-001 | FUSE HOLDER |
| | 1 | | 21 | 1015992-001 | KNOB, POINTER |
| | 1 | | 20 | 1015993-001 | KNOB, LOCK |
| | 1 | | 19 | RA30NASG751A (1896968-117) | RESISTOR, VARIABLE |
| | 1 | | 18 | 1015994-001 | SWITCH, PUSH |
| SEE NOTE 3 | 1 | | 17 | 1015785-010 | SLIDE ASSEMBLY (L.H.) |
| | 1 | | 16 | 1015785-009 | SLIDE ASSEMBLY (R.H.) |
| | 10 | | 15 | 1015832-318 | RELAY, SENSITIVE |
| | 10 | | 14 | 1015802-004 | RELAY, ARMATURE |
| | 22 | | 13 | 1015837-001 | RELAY, ARMATURE |
| | 1 | | 12 | *1016096-002* | *RELAY, TIME DELAY* |
| | 1 | | 11 | *1016096-001* | *RELAY, TIME DELAY* |
| | 1 | | 7 | 1900233 | DIODE & RESISTOR BOARD ASSY |
| | 1 | | 6 | 1900231 | DIODE BOARD ASSEMBLY |
| | 1 | | 5 | 1900230 | BRACKET, MOUNTING (INSEP) ASSY |
| | 1 | | 4 | 1900229 | PLATE, MOUNTING RELAY (INSEP) ASSY |
| | 2 | | 3 | 1900015-051 | HANDLE ASSEMBLY |
| | 1 | | 2 | 1900228 | DRAWER (INSEP) ASSEMBLY |
| | 1 | | 1 | 1900227 | PANEL, FRONT |

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

| SHEET 1 | SHEET 2 |
|---|---|
| M | M |
| L | L |
| K | – |
| J | J |
| H | – |
| G | G |
| F | – |
| E | E |

REVISION STATUS OF SHEETS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900004 | 1900004 | -011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN E. Miller DATE 14 Jun 63
CHECKED Ed Foster 25 JUN 63
APPROVAL 25 Jun 63
APPROVAL 7/2/63
NASA APPROVAL
MIT APPROVAL 3 July 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

TEST CONTROL ASSEMBLY

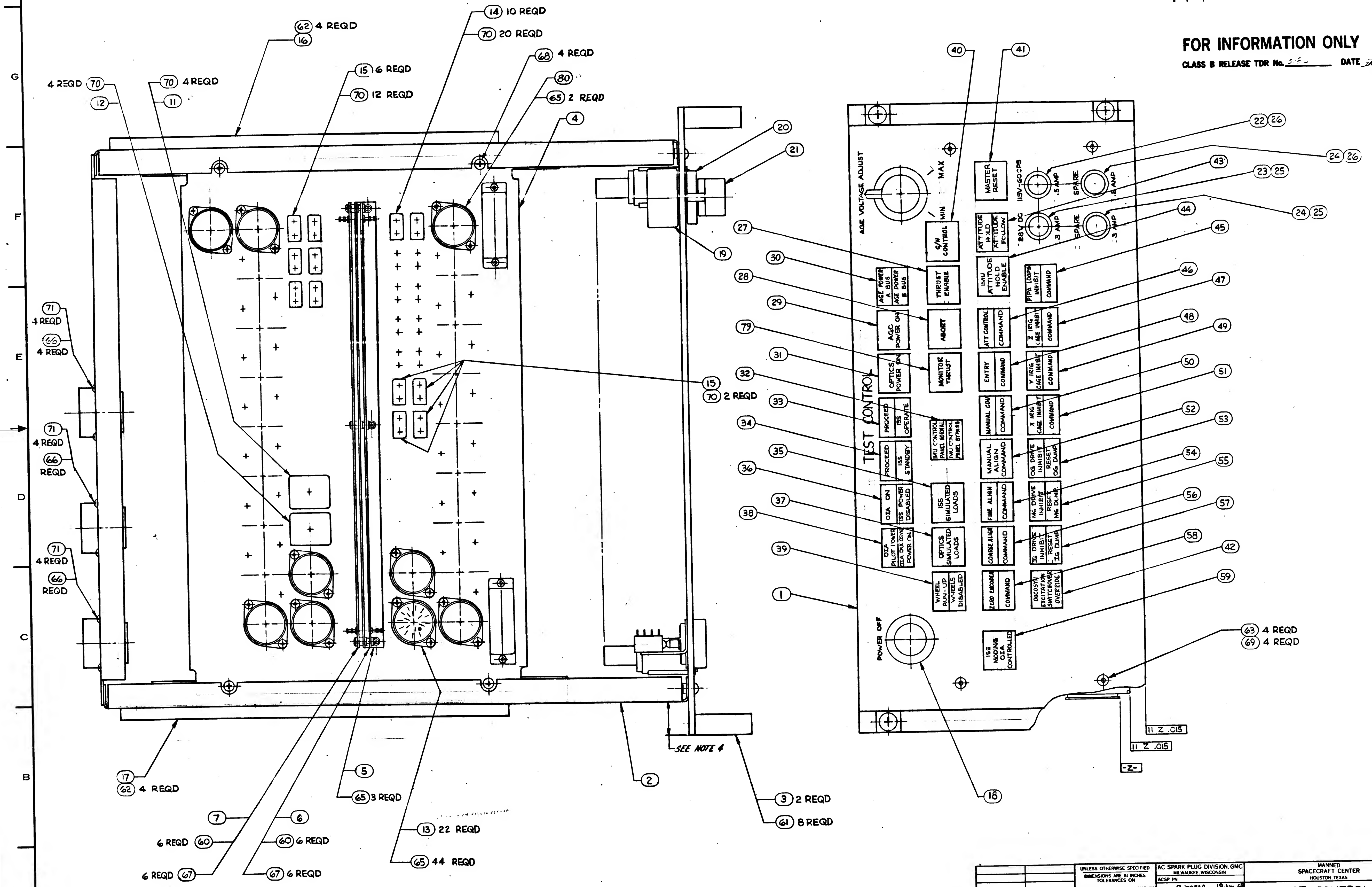
CODE IDENT NO.
SIZE E
1900059
SCALE FULL
SHEET 1 OF 2

1900059 M

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| E | | SHEET 2 ADDED | — | | |
| G | | CHANGE IN ACCORDANCE WITH MXC-188068 TDRR | —<br>22377 | 16 AUG 63 | J.J.J. |
| J | | CHANGE IN ACCORDANCE WITH MXC 188861 | | 18 SEP 63 | C.M.K. |
| L | | CHANGE IN ACCORDANCE WITH MXC 189521 | | 19 SEP 63 | C.M.K. |
| M | | CHANGE IN ACCORDANCE WITH MXC189584 PER TDRR 22723 | | 20 SEP 63 | C.M.K. |

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 212 DATE 3 Jan 63



| | |
|---|---|
| | |
| NEXT ASSY | USED ON |
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN E. Miller DATE 19 Jun 63
CHECKED Ed. Foster 25 JUN 63
APPROVAL 25 JUN 63
APPROVAL
NASA APPROVAL
MIT APPROVAL W. Kaffe 31 Jul 67

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TEST CONTROL
ASSEMBLY

CODE IDENT NO.
SIZE E
1900059
SCALE FULL
SHEET 2 OF 2

1900059 M

INCHES
PHOTOGRAPHIC SCALE ONLY

B 1900059

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD |
| A | | ADDED ITEMS 1 THRU 7 | D.D 51494 | 25 APR 63 | PK<br>GN |
| A1 | | P/N 1015837 QUANTITY WAS 44<br>P/N 1015802 QUANTITY WAS 6 | MXC 186402 | 15 MAY 63 | |
| A2 | | ADDED TO LIST OF MATERIAL:<br>1- 1010389-058, 1-1015833-006,<br>1- RA30NASD351A, 1-1015833-701 | MXC 186532 | 16 MAY 63 | |
| B | | ADDED "ASSEMBLY" TO TITLE.<br>ADDED TO LIST OF MATERIAL:<br>P/N 1015826-296, SCREW, FLAT HEAD, HEX SOCKET. | | 16 MAY 63 | WJK<br>22 May 63 |

**FOR INFORMATION ONLY**

**CLASS B RELEASE TDR No.** 01314 **DATE** 22 May 63

| QUANTITY REQUIRED | | | | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | 011 | | | | |
| | | | 1 | | | 1010389-058 | RESISTOR, 1200 Ω, 1%, 3W |
| | | | 1 | | | RA30NASD351A | (MIL-R-19) RESISTOR |
| | | | 1 | | | 1015833-006 | RELAY, THERMAL |
| | | | 1 | | | 1015833-701 | RELAY, THERMAL |
| | | | 1 | | | 1015785-010 | SLIDE, L.H. |
| | | | 1 | | | 1015785-009 | SLIDE, R.H. |
| | | | 2 | | | 1900015-041 | HANDLES |
| | | | | | | 1015826-296 | SCREW, FLAT HD, HEX SOCKET |
| | | | 1 | | | MS3127-24-61P | CONNECTOR |
| | | | 28 | | | 1015802-001 | RELAY - 2PDT |
| | | | 23 | | | 1015837-001 | RELAY - 6PDT |

LIST OF PARTS AND MATERIALS

| APPLICATION | | |
|---|---|---|
| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
| 1900004 | 1900004 | |

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + −
DECIMALS + −
ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN W. Vlick DATE 9 APR 63
CHECKED 10 APR 63
APPROVAL 10 APR 63
APPROVAL 10 APR 63
NASA APPROVAL 5-22-63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

# CONTROL TEST ASSEMBLY

CODE IDENT NO.
SIZE D
1900059
SCALE
SHEET

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

D 1900059

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
| A | | ADDED ITEMS 1 THRU 7 | D.D. 51494 | 25 APR 63 | R.K. / GM |
| A1 | | P/N 1015837 QUANTITY WAS 44<br>P/N 1015802 QUANTITY WAS 6 | MXC 186402 | 16 MAY 63 | |
| A2 | | ADDED TO LIST OF MATERIAL:<br>1-1010389-058, 1-1015833-006,<br>1-RA30NASD351A, 1-1015833-701 | MXC 186532 | 16 MAY 63 | |
| B | | ADDED "ASSEMBLY" TO TITLE.<br>ADDED TO LIST OF MATERIAL:<br>P/N 1015826-296, SCREW, FLAT HEAD, HEX SOCKET. PER MXC 187188 | | 16 MAY 63 | WJK 22 May 63 |
| B1 | | CHANGED PER MXC 187257 | — | 18 JUNE 63 | M.G. / T.M. |
| C | | CHANGED PER MXC-187307 | — | | |
| D | | REPLACED WITH CHANGE BY REVISION "E" PER MXC 187820 | TDRR 02377 | 8 JUL 63 | |

(M)

**FOR INFORMATION ONLY**

**CLASS B RELEASE TDR No.** 01314 **DATE** 27 May 63

(D) REPLACED WITH CHANGE BY REVISION "E" PER MXC 187820

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | 2 | | | 1015868-500 | CONNECTOR PLUG |
| | | | 10 | | | RC32GF122J | (1896953-065) RESISTOR (MIL-R-11) |
| | | | 35 | | | IN645 M | (1896966-004) SEMICOND DEVICE DIODE (MIL-S-19500) |
| | | | 1 | | | MS3127E-24-61-PW | CONNECTOR |
| | | | 100 | | | 1015817-424 | SOCKET CONTACT |
| | | | 100 | | | 1015818-424 | PIN-CONTACT |
| | | | 2 | | | 1015867-500 | CONNECTOR-RECEPTACLE |
| | | | 3 | | | 1015837-001 | RELAY 6PDT |
| | | | 10 | | | 1015832-318 | RELAY-SENSITIVE |
| | | | 1 | | | 1010389-058 | RESISTOR, 1200 Ω, 1%, 3W |
| | | | 1 | | | RA30NASD351A | (MIL-R-19) RESISTOR |
| | | | 1 | | | 1015833-006 | RELAY, THERMAL |
| | | | 1 | | | 1015833-701 | RELAY, THERMAL |
| | | | 1 | | | 1015785-010 | SLIDE, L.H. |
| | | | 1 | | | 1015785-009 | SLIDE, R.H. |
| | | | 2 | | | 1900015-041 | HANDLES |
| | | | | | | 1015826-296 | SCREW, FLAT HD, HEX SOCKET |
| | | | 1 | | | MS3127-24-61P | CONNECTOR |
| | | | 10 | | | 1015802-004 | RELAY - 2PDT |
| | | | 23 | | | 1015837-001 | RELAY - 6PDT |
| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| QUANTITY REQUIRED | | | | | LIST OF PARTS AND MATERIALS | | |

| | | |
|---|---|---|
| 1900004 | 1900004 | |
| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
| APPLICATION | | |

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN W. Phil 9 APR 63
CHECKED Kowske DATE 10 APR 63
APPROVAL 10 APR 63
APPROVAL 10 APR 63
NASA APPROVAL W J Rhine 5-23-63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CONTROL, TEST ASSEMBLY

CODE IDENT NO.
SIZE D
1900059
SCALE
SHEET

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

SOLDER PER MIL-S-6872 (ES-2505-1 TYPE 2 FLUX) USING ITEMS 76 AND 78.

1 VENDOR ITEM - SEE SPEC CONTROL DRAWING.

2 PANEL AND CHASSIS TO BE CENTRALIZED WITHIN .010.

DRAWER SLIDE MOUNTING SCREWS AND FRONT PANEL MOUNTING SCREWS SHALL BE SUBJECTED TO TORQUE OF 37-40 LB/IN AT INSTALLATION.

MARK WEIGHT OF ASSEMBLY PER ND- ADJACENT TO NAMEPLATE LOCATION.

REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
|---|---|---|---|---|---|
| E | | *REPLACES REVISION "D" WITH CHANGE PER MXC 187820 WAS SH 1 OF 1 "D SIZE".* | | 8 JUL 63 | |
| F | | CHANGE IN ACCORDANCE WITH MXC-187965 | | 16 AUG 63 | |
| G | | CHANGE IN ACCORDANCE WITH MXC-188068 | | | |
| – | – | REVISED CUSTOMER DATA (V10-62 | | | |
| | | INCORPORATES CHANGES F&G PER TDRR 02377 | | | |

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01314 DATE 22 May 63

(E) *REPLACES REVISION "D" WITH CHANGE PER MXC 187820 WAS SH 1 OF 1 "D SIZE"*

| QUANTITY REQUIRED 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|
| AR | | 78 | AR | FLUX |
| 1 | | 77 | | NAMEPLATE |
| AR | | 76 | SN60 | SOLDER |
| X | | 74 | | SCHEMATIC DIAGRAM-ELEC |
| 1 | | 73 | | WIRE LIST |
| 1 | | 72 | 1900186 | WIRING HARNESS |
| 12 | | 71 | AN363C632 | |
| 40 | | 70 | MS20365D440 | |
| 4 | | 69 | AN363C1032 | NUT, SELF LOCKING |
| 4 | | 68 | -39 | |
| 12 | | 67 | -26 | |
| 12 | | 66 | -25 | |
| 55 | | 65 | -24 | |
| 4 | | 64 | MS35216-13 | PAN HEAD |
| 4 | | 63 | 1006783-45 | BUTTON HEAD |
| 8 | | 62 | 1006783-44 | BUTTON HEAD |
| 8 | | 61 | 1015831-257 | SCREW, FLAT HEAD |
| 12 | | 60 | | SPACER |
| 1 | | 59 | -108 | |
| 1 | | 58 | -316 | |
| 1 | | 57 | -704 | |
| 1 | | 56 | -318 | |
| 1 | | 55 | -705 | |
| 1 | | 54 | -319 | |
| 1 | | 53 | -706 | |
| 1 | | 52 | -320 | |
| 1 | | 51 | -707 | |
| 1 | | 50 | -321 | |
| 1 | | 49 | -708 | |
| 1 | | 48 | -322 | |
| 1 | | 47 | -709 | |
| 1 | | 46 | -307 | |
| 1 | | 45 | -710 | |
| 1 | | 44 | -519 | |
| 1 | | 43 | -338 | |
| 1 | | 42 | -526 | |
| 1 | | 41 | -317 | |
| 1 | | 40 | 1015869-527 | |
| 1 | | 39 | | |
| 1 | | 38 | | LIGHT, INDICATOR |

LIST OF PARTS AND MATERIALS

| G | G |
|---|---|
| F | – |
| E | E |
| SHEET 1 | SHEET 2 |

REVISION STATUS OF SHEETS

| QUANTITY REQUIRED 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|
| 1 | | 37 | -509 | |
| 1 | | 36 | -302 | |
| 1 | | 35 | | |
| 1 | | 34 | -303 | |
| 1 | | 33 | -304 | |
| 1 | | 32 | -511 | |
| 1 | | 31 | -711 | |
| 1 | | 30 | -503 | |
| 1 | | 29 | -712 | |
| 1 | | 28 | -504 | |
| 1 | | 27 | 1015869-528 | LIGHT, INDICATOR |
| 2 | | 26 | MS90078-7-1 | FUSE |
| 2 | | 25 | MS90078-12-1 | FUSE |
| 2 | | 24 | MS26572-1 | |
| 1 | | 23 | 1015873-008 | |
| 1 | | 22 | 1015873-001 | FUSE HOLDER |
| 1 | | 21 | 1015992-001 | KNOB, POINTER |
| 1 | | 20 | 1015993-001 | KNOB, LOCK |
| 1 | | 19 | | RESISTOR, VARIABLE |
| 1 | | 18 | 1015994-001 | SWITCH, PUSH |
| 1 | | 17 | 1015785-010 | SLIDE ASSEMBLY (L.H.) |
| 1 | | 16 | 1015785-009 | SLIDE ASSEMBLY (R.H.) |
| 10 | | 15 | 1015832-318 | RELAY, SENSITIVE |
| 10 | | 14 | 1015802-004 | RELAY, ARMATURE |
| 26 | | 13 | 1015837-001 | RELAY, ARMATURE |
| 1 | | 12 | 1015833-701 | RELAY, THERMAL |
| 1 | | 11 | 1015833-006 | RELAY, THERMAL |
| 1 | | 7 | 1900233 | DIODE & RESISTOR BOARD ASSY |
| 1 | | 6 | 1900231 | DIODE BOARD ASSEMBLY |
| 1 | | 5 | 1900230 | BRACKET, MOUNTING (INSEP) ASSY |
| 1 | | 4 | 1900229 | PLATE, MOUNTING RELAY (INSEP) ASSY |
| 2 | | 3 | 1900015-051 | HANDLE ASSEMBLY |
| 1 | | 2 | 1900228 | DRAWER (INSEP) ASSEMBLY |
| 1 | | 1 | 1900227 | PANEL, FRONT |

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900004 | 1900004 | -011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL ——
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN E. Millen DATE 14 Jun 63
CHECKED Ed Foster 25 JUN 63
APPROVAL 25 Jun 63
APPROVAL 7/2/63
NASA APPROVAL
MIT APPROVAL 3 July 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

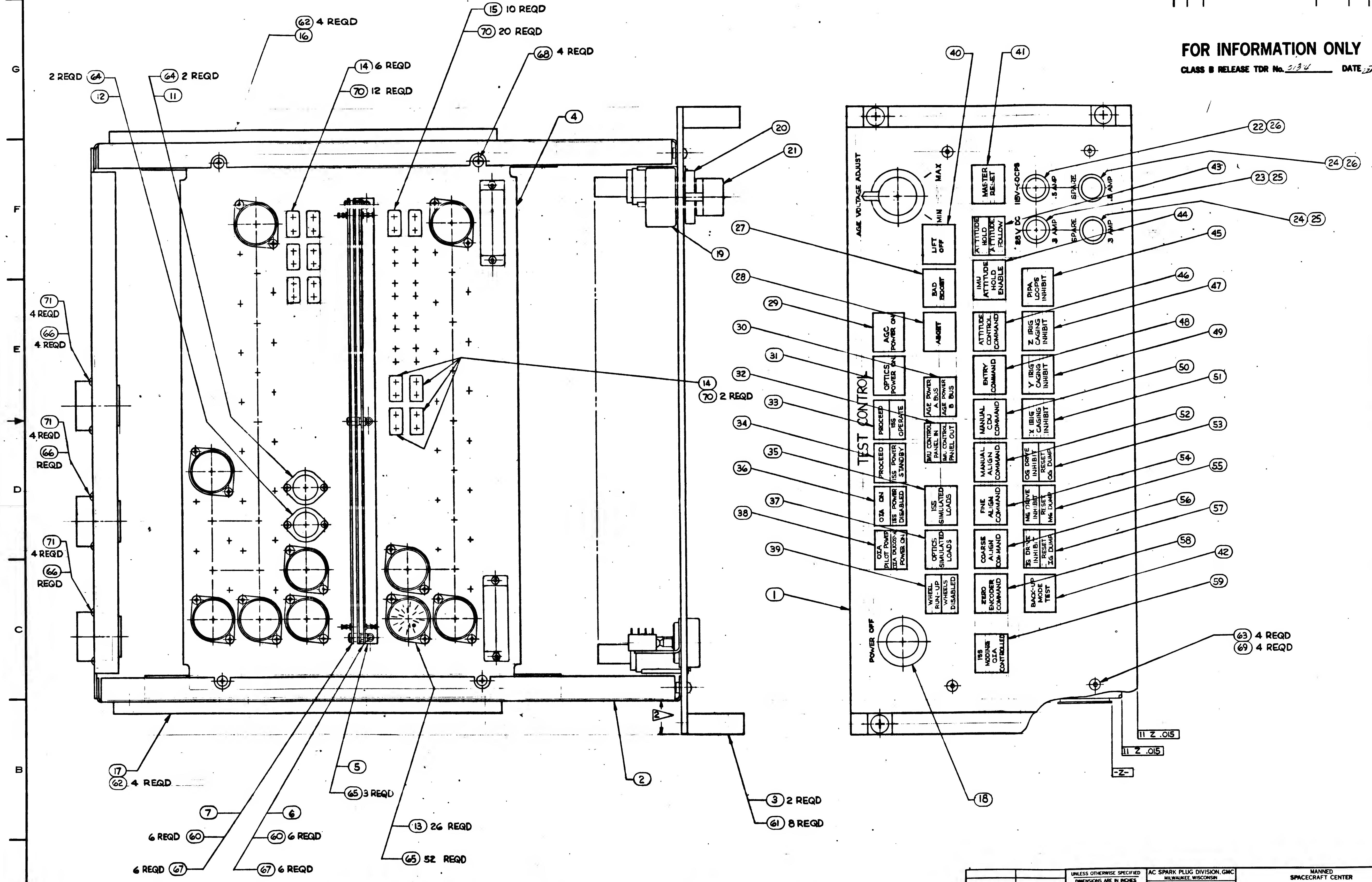
TEST CONTROL ASSEMBLY

CODE IDENT NO.
SIZE E
1900059
SCALE FULL
SHEET 1 OF 2

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
| E | | SHEET 2 ADDED | — | | |
| G | | CHANGE IN ACCORDANCE WITH MXC-188068 TDRR | — 02377 | 16 AUG 63 | J.J.J. |

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 0134 DATE 22 May 63



| | |
|---|---|
| | |
| NEXT ASSY | USED ON |
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± —
DECIMALS ± —
ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN E. Miller DATE 19 Jun 63
CHECKED Ed Foster 25 Jun 63
APPROVAL 25 Jun 63
APPROVAL
NASA APPROVAL
MIT APPROVAL 31 Jul 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TEST CONTROL
ASSEMBLY

CODE IDENT NO.
SIZE E
1900059
SCALE FULL
SHEET 2 OF 2

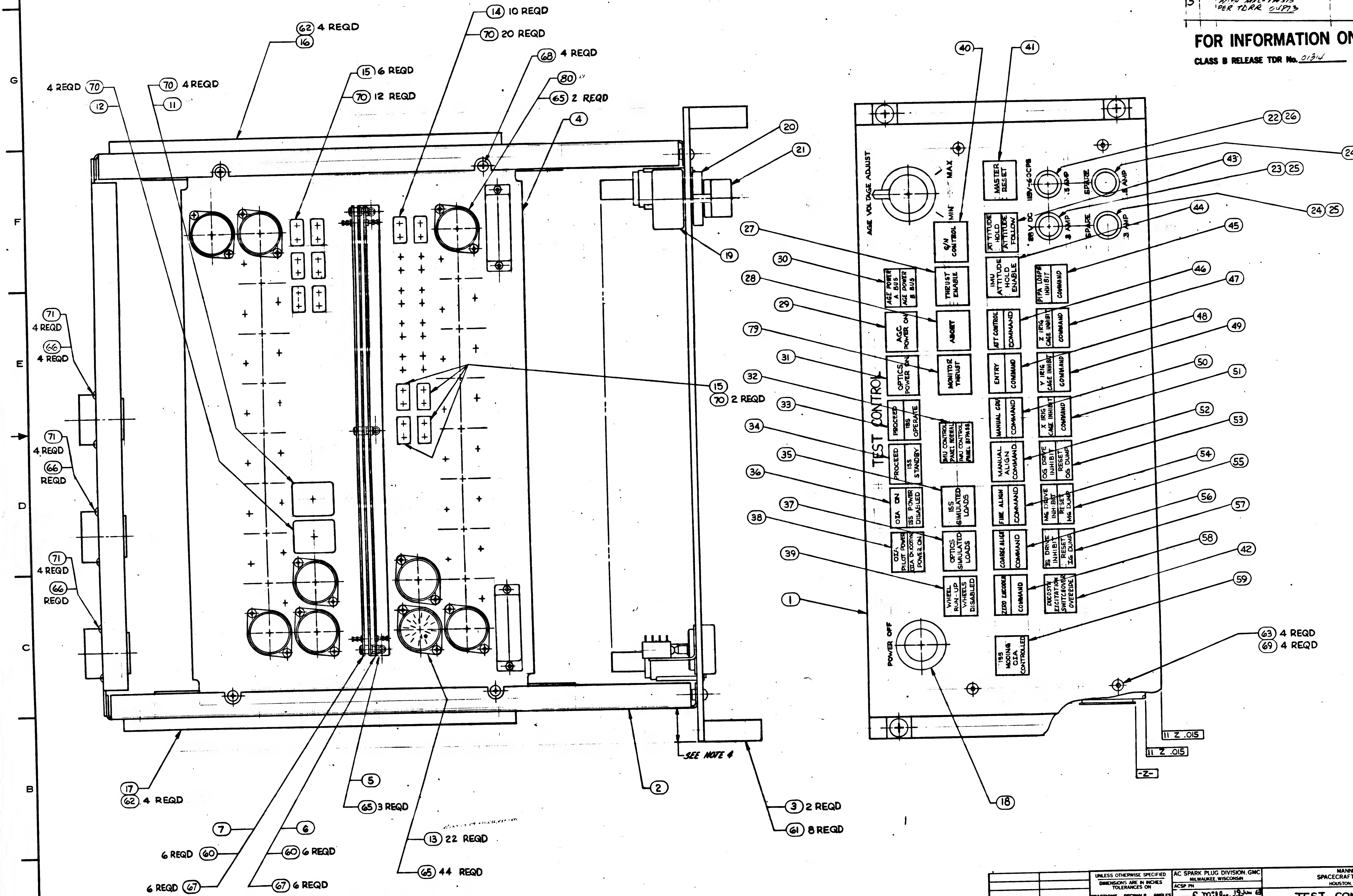
1900059 G

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| E | | SHEET 2 ADDED | — | | |
| G | | CHANGE IN ACCORDANCE WITH MXC-188068 TDRR | — | | J.J. |
| J | | CHANGE IN ACCORDANCE WITH MXC 188861 | | SEP 63 | C.M.K. MEM |
| L | | CHANGE IN ACCORDANCE WITH MXC 189521 | | 19 SEP 63 | C.M.K. MEM |
| M | | CHANGE IN ACCORDANCE WITH MXC 189584 PER TDRR 03723 | | 20 SEP 63 | C.M.K. MEM |
| N | | CHANGE IN ACCORDANCE WITH MXC-189711 | | NOV 63 | M.G. |
| S | | CHANGE IN ACCORDANCE WITH MXC-190315 PER TDRR 04873 | | 11 NOV 63 | M.G. |

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01314 DATE 22 May 63



| | |
|---|---|
| NEXT ASSY | USED ON |
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN E. Miller DATE 19 Jun 63
CHECKED Ed Foster 25 Jun 63
APPROVAL 25 Jun 63
APPROVAL
NASA APPROVAL
MIT APPROVAL 31 Jul 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

**TEST CONTROL ASSEMBLY**

CODE IDENT NO.
SIZE E
1900059
SCALE FULL
SHEET 2 OF 2

1900059

INCHES
PHOTOGRAPHIC SCALE ONLY

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. SOLDER PER MIL-S-6872 (ES-2505-1 TYPE 2 FLUX) USING ITEMS 76 AND 78.
3. VENDOR ITEM - SEE SPEC CONTROL DRAWING.
4. PANEL AND CHASSIS TO BE CENTRALIZED WITHIN .010.
5. DRAWER SLIDE MOUNTING SCREWS AND FRONT PANEL MOUNTING SCREWS SHALL BE SUBJECTED TO TORQUE OF 37-40 LB/IN AT INSTALLATION.
6. MARK WEIGHT OF ASSEMBLY PER ND- ADJACENT TO NAMEPLATE LOCATION.

REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD |
|---|---|---|---|---|---|
| E | | REPLACES REVISION "D" WITH CHANGE PER MXC 187820 WAS SH 1 OF 1 "D SIZE" | | 3 JUL 63 | |
| F | | CHANGE IN ACCORDANCE WITH MXC-187965 | | 16 AUG 63 | |
| G | | CHANGE IN ACCORDANCE WITH MXC-188068 | | 63 | |
| - | - | REVISED CUSTOMER DATA (V10-62 | | | |
| | | INCORPORATES CHANGES F&G PER TDRR 02377 | | | |
| H | | CHANGE IN ACCORDANCE WITH MXC 188187 | | 17 SEP 63 | |
| J | | CHANGE IN ACCORDANCE WITH MXC 188861 | | 18 SEP 63 | C.M.K. |
| K | | CHANGE IN ACCORDANCE WITH MXC 189123 | | 18 SEP 63 | C.M.K. |
| L | | CHANGE IN ACCORDANCE WITH MXC 189521 | | 19 SEP 63 | C.M.K. |
| M | | CHANGE IN ACCORDANCE WITH MXC 189584 PER TDRR 03722 | | 20 SEP 63 | C.M.K. |
| N | | CHANGE IN ACCORDANCE WITH MXC-189711 REVISION STATUS CHANGED | | 4 NOV 63 | M.G. |
| P | | CHANGE IN ACCORDANCE WITH MXC-189924 REVISION STATUS CHANGED | | 7 NOV 63 | M.G. |
| R | | CHANGE IN ACCORDANCE WITH MXC-190117 REVISION STATUS CHANGED | | 8 NOV 63 | M.G. |
| S | | CHANGE IN ACCORDANCE WITH MXC-190315 REVISION STATUS CHANGED | | 11 NOV 63 | M.G. |
| T | | CHANGE IN ACCORDANCE WITH MXC-190558 REVISION STATUS CHANGED TDRR 01872 | | 12 NOV 63 | M.G. |

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01314 DATE 22 May 63

(E) REPLACES REVISION "D" WITH CHANGE PER MXC 187820 WAS SH 1 OF 1 "D SIZE"

| | QUANTITY REQUIRED 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|
| | 1 | | 83 | 1900614 | WIRING HARNESS B |
| | X | | 82 | ATP1900059 | ASSEMBLY TEST PROCEDURE |
| | 1 | | 81 | 1900615 | WIRE LIST B-B |
| | 1 | | 80 | 1016024-001 | RELAY, ARMATURE |
| | 1 | | 79 | 1015869-529 | LIGHT, INDICATOR |
| | AR | | 78 | AR | FLUX |
| | 1 | | 77 | | NAMEPLATE |
| | AR | | 76 | SN60 | SOLDER |
| | X | | 74 | | SCHEMATIC DIAGRAM-ELEC |
| | 1 | | 73 | 1900616 | WIRE LIST A-A |
| | 1 | | 72 | 1900186 | WIRING HARNESS |
| | 12 | | 71 | AN363C632 | ↑ |
| | 48 | | 70 | MS20365D440 | ↑ |
| | 4 | | 69 | AN363C1032 | NUT, SELF LOCKING |
| | 4 | | 68 | ↑ -40 | ↑ |
| | 12 | | 67 | ↑ -26 | ↑ |
| | 12 | | 66 | ↑ -25 | ↑ |
| | 49 | | 65 | MS35216-24 | SCREW, PAN HEAD |
| SEE NOTE 3 | 4 | | 63 | 1006783-45 | ↑ BUTTON HEAD |
| | 8 | | 62 | 1006783-44 | BUTTON HEAD |
| | 8 | | 61 | 1015831-257 | SCREW, FLAT HEAD |
| | 12 | | 60 | | SPACER |
| | 1 | | 59 | ↑ -108 | ↑ |
| | 1 | | 58 | -316 | ↑ |
| | 1 | | 57 | -704 | ↑ |
| | 1 | | 56 | -318 | ↑ |
| | 1 | | 55 | -705 | ↑ |
| | 1 | | 54 | -319 | ↑ |
| | 1 | | 53 | -706 | ↑ |
| | 1 | | 52 | -320 | ↑ |
| | 1 | | 51 | -707 | ↑ |
| | 1 | | 50 | -321 | ↑ |
| | 1 | | 49 | -708 | ↑ |
| | 1 | | 48 | -322 | ↑ |
| | 1 | | 47 | -709 | ↑ |
| | 1 | | 46 | -307 | ↑ |
| | 1 | | 45 | -710 | ↑ |
| | 1 | | 44 | -519 | ↑ |
| | 1 | | 43 | -338 | ↑ |
| | 1 | | 42 | -526 | ↑ |
| | 1 | | 41 | -317 | ↑ |
| | 1 | | 40 | 1015869-527 | ↑ |
| | 1 | | 39 | 1015869-719 | ↑ |
| | 1 | | 38 | 1015869-103 | LIGHT, INDICATOR |
| SEE NOTE 3 | 1 | | 37 | ↑ -509 | ↑ |
| | 1 | | 36 | -721 | ↑ |
| | 1 | | 35 | -510 | ↑ |
| | 1 | | 34 | -303 | ↑ |
| | 1 | | 33 | -304 | ↑ |
| | 1 | | 32 | -511 | ↑ |
| | 1 | | 31 | -711 | ↑ |
| | 1 | | 30 | -503 | ↑ |
| | 1 | | 29 | -712 | ↑ |
| | 1 | | 28 | -504 | ↑ |
| | 1 | | 27 | 1015869-528 | LIGHT, INDICATOR |
| | 2 | | 26 | MS90078-7-1 | FUSE |
| | 2 | | 25 | MS90078-12-1 | FUSE |
| | 2 | | 24 | MS26572-1 | ↑ |
| SEE NOTE 3 | 1 | | 23 | 1015873-008 | ↑ |
| SEE NOTE 3 | 1 | | 22 | 1015873-001 | FUSE HOLDER |
| | 1 | | 21 | 1015992-001 | KNOB, POINTER |
| | 1 | | 20 | 1015993-001 | KNOB, LOCK |
| | 1 | | 19 | RA30NASG751A (1896968-117) | RESISTOR, VARIABLE |
| | 1 | | 18 | 1015994-001 | SWITCH, PUSH |
| SEE NOTE 3 | 1 | | 17 | 1015785-010 | SLIDE ASSEMBLY (L.H.) |
| | 1 | | 16 | 1015785-009 | SLIDE ASSEMBLY (R.H.) |
| | 10 | | 15 | 1015832-318 | RELAY, SENSITIVE |
| | 10 | | 14 | 1015802-004 | RELAY, ARMATURE |
| | 22 | | 13 | 1015837-001 | RELAY, ARMATURE |
| | 1 | | 12 | 1016096-002 | RELAY, TIME DELAY |
| | 1 | | 11 | 1016096-001 | RELAY, TIME DELAY |
| | 1 | | 7 | 1900233 | DIODE & RESISTOR BOARD ASSY |
| | 1 | | 6 | 1900231 | DIODE BOARD ASSEMBLY |
| | 1 | | 5 | 1900230 | BRACKET, MOUNTING (INSEP) ASSY |
| | 1 | | 4 | 1900229 | PLATE, MOUNTING RELAY (INSEP) ASSY |
| | 2 | | 3 | 1900015-051 | HANDLE ASSEMBLY |
| | 1 | | 2 | 1900228 | DRAWER (INSEP) ASSEMBLY |
| | 1 | | 1 | 1900227 | PANEL, FRONT |

LIST OF PARTS AND MATERIALS

| SHEET 1 | SHEET 2 |
|---|---|
| T | S |
| S | S |
| R | N |
| P | N |
| N | N |
| M | M |
| L | L |
| K | - |
| J | J |
| H | - |
| G | G |
| F | - |
| E | E |

REVISION STATUS OF SHEETS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900004 | 1900004 | -011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN E. Millan DATE 14 Jun 63
CHECKED Ed Foster 25 JUN 63
APPROVAL 25 Jun 63
APPROVAL 7-26-63
NASA APPROVAL
MIT APPROVAL 31 July 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

TEST CONTROL
ASSEMBLY

CODE IDENT NO.
SIZE E
1900059
SCALE FULL
SHEET 1 OF 2

1900059 T

INCHES
PHOTOGRAPHIC SCALE ONLY

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. SOLDER PER MIL-S-6872 (ES-2505-1 TYPE 2 FLUX) USING ITEMS 76 AND 78.
3. VENDOR ITEM - SEE SPEC CONTROL DRAWING.
4. PANEL AND CHASSIS TO BE CENTRALIZED WITHIN .010.
5. DRAWER SLIDE MOUNTING SCREWS AND FRONT PANEL MOUNTING SCREWS SHALL BE SUBJECTED TO TORQUE OF 37-40 LB/IN AT INSTALLATION.
6. MARK WEIGHT OF ASSEMBLY PER ND-           ADJACENT TO NAMEPLATE LOCATION.

REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
|---|---|---|---|---|---|
| E | | REPLACES REVISION "D" WITH CHANGE PER MXC 187820 WAS SH 1 OF 1 "C SIZE". | | 5 JUL 63 | |
| F | | CHANGE IN ACCORDANCE WITH MXC-187965 | | 16 AUG 63 | |
| G | | CHANGE IN ACCORDANCE WITH MXC-188068 | | | |
| – | – | REVISED CUSTOMER DATA (V10-62 | | | |
| | | INCORPORATES CHANGES F&G PER TDRR 02377 | | | VK |
| H | | CHANGE IN ACCORDANCE WITH MXC 188187 | | 17 SEP 63 | MEM |
| J | | CHANGE IN ACCORDANCE WITH MXC 188861 | | 18 SEP 63 | C.M.K. MEM |
| K | | CHANGE IN ACCORDANCE WITH MXC 189123 | | 18 SEP 63 | C.M.K. MEM |
| L | | CHANGE IN ACCORDANCE WITH MXC 189521 | | 19 SEP 63 | C.M.K. MEM |
| M | | CHANGE IN ACCORDANCE WITH MXC 189584 PER TDRR [illegible] | 5 OCT 63 WK | 20 SEP 63 | C.M.K. MEM |
| N | | CHANGE IN ACCORDANCE WITH MXC-189711 REVISION STATUS CHANGED | | 4-NOV 63 | M.G. |
| P | | CHANGE IN ACCORDANCE WITH MXC-189924 REVISION STATUS CHANGED | | 7-NOV-63 | M.G. |
| R | | CHANGE IN ACCORDANCE WITH MXC-190117 REVISION STATUS CHANGED | | 8-NOV-63 | M.G. |
| S | | CHANGE IN ACCORDANCE WITH MXC-190315 REVISION STATUS CHANGED | | 11-NOV 63 | M.G. |
| T | | CHANGE IN ACCORDANCE WITH MXC-190558 REVISION STATUS CHANGED TDRR 01873 | | 12-NOV 63 | M.G. |
| U | | CHANGE IN ACCORDANCE WITH MXC 190561 | | DEC 63 | ALK |
| V | | CHANGE IN ACCORDANCE WITH MXC 190651 | | 30 DEC 63 | ALK |
| W | | CHANGE IN ACCORDANCE WITH MXC 190826 | | 14 JAN 64 | ALK |
| Y | | REPLACED WITH CHANGE BY REV. Z PER MXC 190732 REVISED PER TDR 8247 | | 31 JAN 64 | ALK |

SEE NOTE 3 (items 63 through 38)

| QUANTITY REQUIRED | | | | EFFECTIVITY | LIST OF PARTS AND MATERIALS | | |
|---|---|---|---|---|---|---|---|
| | | | 011 | | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | 1 | | 83 | 1900614 | WIRING HARNESS B |
| | | | X | | 82 | ATP1900059 | ASSEMBLY TEST PROCEDURE |
| | | | 1 | | 81 | 1900615 | WIRE LIST B-B |
| | | | 1 | | 80 | 1016024-001 | RELAY, ARMATURE |
| | | | | | 79 | | |
| | | | AR | | 78 | AR | FLUX |
| | | | 1 | | 77 | | NAMEPLATE |
| | | | AR | | 76 | SN60 | SOLDER |
| | | | X | | 74 | | SCHEMATIC DIAGRAM-ELEC |
| | | | 1 | | 73 | 1900616 | WIRE LIST A-A |
| | | | 1 | | 72 | 1900186 | WIRING HARNESS |
| | | | 12 | | 71 | AN363C632 | ↑ ↑ ↑ |
| | | | 48 | | 70 | MS20365D440 | ↑ ↑ ↑ |
| | | | 4 | | 69 | AN363C1032 | NUT, SELF LOCKING |
| | | | 4 | | 68 | ↑ -40 | ↑ ↑ ↑ |
| | | | 12 | | 67 | ↑ -26 | ↑ ↑ ↑ |
| | | | 12 | | 66 | ↑ -25 | ↑ ↑ ↑ |
| | | | 49 | | 65 | MS35216-24 | SCREW, PAN HEAD |
| | | | | | | | |
| | | | 4 | | 63 | 1006783-45 | ↑ BUTTON HEAD |
| | | | 8 | | 62 | 1006783-44 | ↑ BUTTON HEAD |
| | | | 8 | | 61 | 1015831-257 | SCREW, FLAT HEAD |
| | | | 12 | | 60 | 1015860-025 | SPACER |
| | | | 1 | | 59 | ↑ -108 | ↑ ↑ |
| | | | 1 | | 58 | ↑ -316 | ↑ ↑ |
| | | | 1 | | 57 | ↑ -704 | ↑ ↑ |
| | | | 1 | | 56 | ↑ -318 | ↑ ↑ |
| | | | 1 | | 55 | ↑ -705 | ↑ ↑ |
| | | | 1 | | 54 | ↑ -319 | ↑ ↑ |
| | | | 1 | | 53 | ↑ -706 | ↑ ↑ |
| | | | 1 | | 52 | ↑ -352 | ↑ ↑ |
| | | | 1 | | 51 | ↑ -707 | ↑ ↑ |
| | | | 1 | | 50 | ↑ -321 | ↑ ↑ |
| | | | 1 | | 49 | ↑ -708 | ↑ ↑ |
| | | | 1 | | 48 | ↑ -322 | ↑ ↑ |
| | | | 1 | | 47 | ↑ -709 | ↑ ↑ |
| | | | 1 | | 46 | ↑ -307 | ↑ ↑ |
| | | | 1 | | 45 | ↑ -710 | ↑ ↑ |
| | | | 1 | | 44 | ↑ -519 | ↑ ↑ |
| | | | 1 | | 43 | ↑ -338 | ↑ ↑ |
| | | | 1 | | 42 | ↑ -526 | ↑ ↑ |
| | | | 1 | | 41 | 1015869-317 | LIGHT, INDICATOR |
| | | | | | 40 | | |
| | | | 1 | | 39 | 1015869-719 | ↑ ↑ |
| | | | 1 | | 38 | 1015869-103 | LIGHT, INDICATOR |

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01314 DATE 28 MAY 63

| Y | Y |
|---|---|
| W | W |
| V | U |
| U | U |
| T | S |
| S | S |
| R | N |
| P | N |
| N | N |
| M | M |
| L | L |
| K | – |
| J | J |
| H | – |
| G | G |
| F | – |
| E | E |
| SHEET 1 | SHEET 2 |
| REVISION STATUS OF SHEETS | |

Ⓔ REPLACES REVISION "D" WITH CHANGE PER MXC 187820 WAS SH 1 OF 1 "D SIZE"

Ⓨ REPLACED WITH CHANGE BY REV Z

SEE NOTE 3 (items 37 through 29; items 23 and 22; items 17 through 11)

| QUANTITY REQUIRED | | | | EFFECTIVITY | LIST OF PARTS AND MATERIALS | | |
|---|---|---|---|---|---|---|---|
| | | | ON | | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| | | | 1 | | 37 | ↑ -509 | ↑ ↑ |
| | | | 1 | | 36 | ↑ -721 | ↑ ↑ |
| | | | 1 | | 35 | ↑ -510 | ↑ ↑ |
| | | | 1 | | 34 | ↑ -303 | ↑ ↑ |
| | | | 1 | | 33 | ↑ -304 | ↑ ↑ |
| | | | 1 | | 32 | ↑ -511 | ↑ ↑ |
| | | | 1 | | 31 | ↑ -711 | ↑ ↑ |
| | | | 1 | | 30 | ↑ -503 | ↑ ↑ |
| | | | 1 | | 29 | 1015869-712 | LIGHT, INDICATOR |
| | | | | | 28 | | |
| | | | 4 | | 27 | | LIGHT, INDICATOR |
| | | | 2 | | 26 | MS90078-7-1 | FUSE |
| | | | 2 | | 25 | MS90078-12-1 | FUSE |
| | | | 2 | | 24 | MS26572-1 | ↑ ↑ |
| | | | 1 | | 23 | 1015873-008 | ↑ ↑ |
| | | | 1 | | 22 | 1015873-001 | FUSE HOLDER |
| | | | 1 | | 21 | 1015992-001 | KNOB, POINTER |
| | | | 1 | | 20 | 1015993-001 | KNOB, LOCK |
| | | | 1 | | 19 | RA30NASG751A (1896968-117) | RESISTOR, VARIABLE |
| | | | 1 | | 18 | 1015994-001 | SWITCH, PUSH |
| | | | 1 | | 17 | 1015785-010 | SLIDE ASSEMBLY (L.H.) |
| | | | 1 | | 16 | 1015785-009 | SLIDE ASSEMBLY (R.H.) |
| | | | 10 | | 15 | 1015832-318 | RELAY, SENSITIVE |
| | | | 10 | | 14 | 1015802-004 | RELAY, ARMATURE |
| | | | 23 | | 13 | 1015837-001 | RELAY, ARMATURE |
| | | | 1 | | 12 | 1016096-002 | RELAY, TIME DELAY |
| | | | 1 | | 11 | 1016096-001 | RELAY, TIME DELAY |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | 1 | | 7 | 1900233 | DIODE & RESISTOR BOARD ASSY |
| | | | 1 | | 6 | 1900672-011 | DIODE BOARD ASSEMBLY |
| | | | 1 | | 5 | 1900230 | BRACKET, MOUNTING (INSEP) ASSY |
| | | | 1 | | 4 | 1900229 | PLATE, MOUNTING RELAY (INSEP) ASSY |
| | | | 2 | | 3 | 1900015-051 | HANDLE ASSEMBLY |
| | | | 1 | | 2 | 1900228 | DRAWER (INSEP) ASSEMBLY |
| | | | 1 | | 1 | 1900227 | PANEL, FRONT |

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900004 | 1900004 | -011 |
| APPLICATION | | |

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN E. Miller DATE 14 Jun 63
CHECKED Ed Foster 25 JUN 63
APPROVAL 25 Jun 63
APPROVAL 26/63
NASA APPROVAL
MIT APPROVAL 4 July 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

TEST CONTROL ASSEMBLY

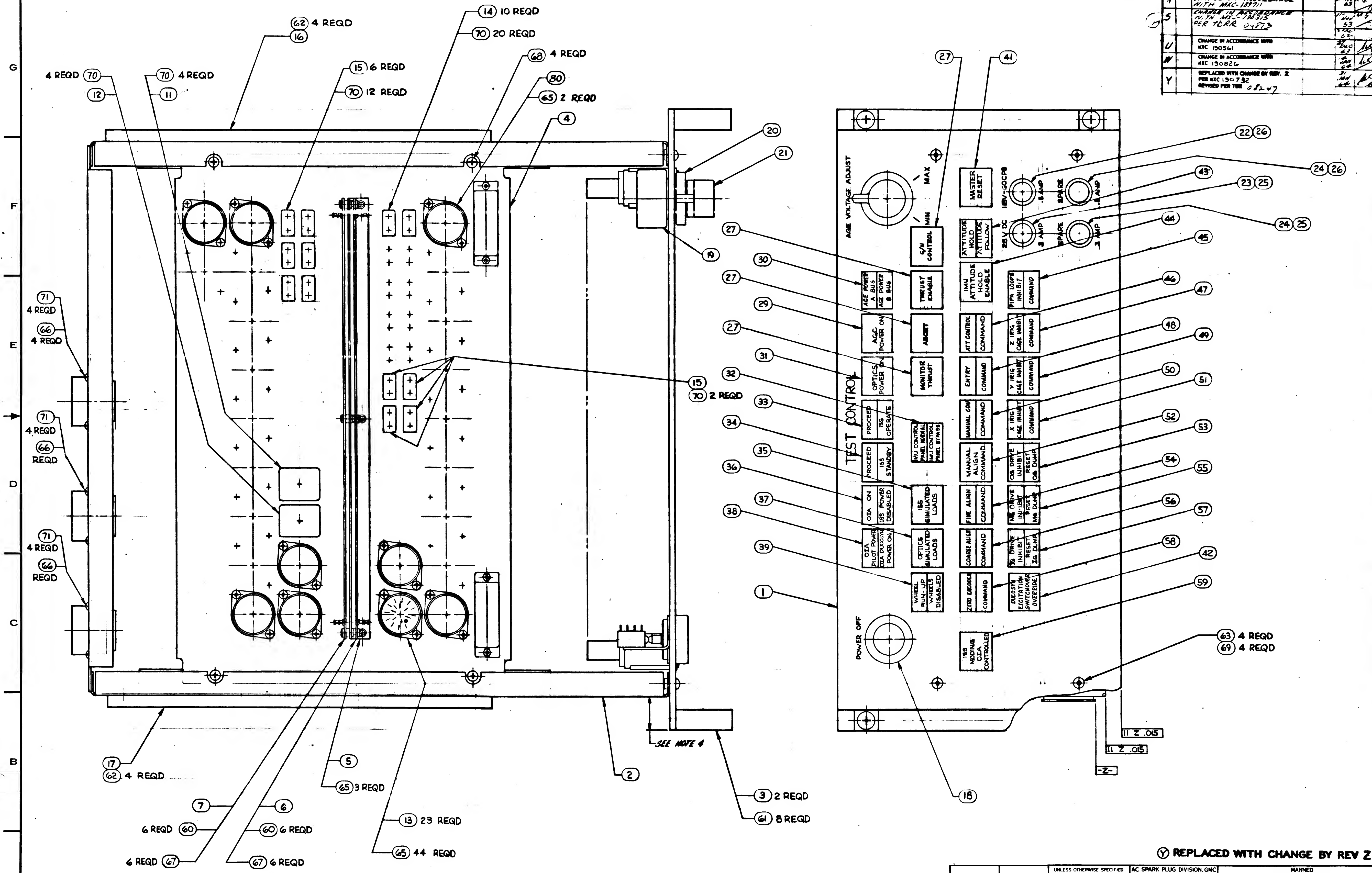
CODE IDENT NO
SIZE E
1900059
SCALE FULL
SHEET 1 OF 2

1900059 Y

| | | REVISIONS | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| E | | SHEET 2 ADDED | — | | |
| G | | CHANGE IN ACCORDANCE WITH MXC-188068 TDRR | — 02377 | 16 AUG 63 | J.J.V. T.W. |
| J | | CHANGE IN ACCORDANCE WITH MXC 188861 | | 18 SEP 63 | C.M.K. M.E.M. |
| L | | CHANGE IN ACCORDANCE WITH MXC 189521 | | 19 SEP 63 | C.M.K. M.E.M. |
| M | | CHANGE IN ACCORDANCE WITH MXC189584 PER TDRR 02723 | W. | 20 SEP 63 | C.M.K. M.E.M. |
| N | | CHANGE IN ACCORDANCE WITH MXC-189711 | | 5-NOV 63 | |
| S | | CHANGE IN ACCORDANCE WITH MXC-190315 PER TDRR 04873 | | 11 NOV 63 | |
| U | | CHANGE IN ACCORDANCE WITH MXC 190561 | | 27 DEC 63 | |
| W | | CHANGE IN ACCORDANCE WITH MXC 190826 | | 4 JAN 64 | |
| Y | | REPLACED WITH CHANGE BY REV. Z PER MXC 190732 REVISED PER TDR 08247 | | 31 JAN 64 | |

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01314 DATE 22 MAR 63



Ⓨ REPLACED WITH CHANGE BY REV Z

| | | | | | |
|---|---|---|---|---|---|
| NEXT ASSY | USED ON | UNLESS OTHERWISE SPECIFIED<br>DIMENSIONS ARE IN INCHES<br>TOLERANCES ON<br>FRACTIONS DECIMALS ANGLES<br>+ — + — + —<br>− — − — − —<br>DO NOT SCALE THIS DRAWING | AC SPARK PLUG DIVISION, GMC<br>MILWAUKEE, WISCONSIN<br>ACSP PN | MANNED SPACECRAFT CENTER<br>HOUSTON, TEXAS | |
| APPLICATION | | MATERIAL —— | DRAWN E. Miller DATE 19 Jun 63<br>CHECKED Ed Foster 25 JUN 63<br>APPROVAL 25 JUN 63<br>APPROVAL<br>NASA APPROVAL<br>MIT APPROVAL | TEST CONTROL<br>ASSEMBLY | |
| | | CONTRACT | | CODE IDENT NO. | SIZE E 1900059 |
| | | | | SCALE FULL | SHEET 2 OF 2 |

1900059 Y

1900060 A

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
| A | | P/N 1900081 3200CY PWR SUPPLY ADDED<br>P/N 1900079 400 CY PWR SUPPLY ADDED<br>PART NAME (1900060) WAS PWR CONTRO | DC 5.5[illegible] | 25 APR 63 | |

PICTURE INCOMPLETE

**FOR INFORMATION ONLY**

**CLASS B RELEASE TDR No.** 01211 **DATE** 8 May 63

| QUANTITY REQUIRED 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|
| 1 | | | 1900079-011 | POWER SUPPLY, 400 CY, 6 AMP, ASSY |
| 1 | | | 1900081-011 | POWER SUPPLY, 3200 CY, 3 AMP, ASSY |
| 4 | | | 1006927 | INDICATOR, ELAPSED TIME |

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900004 | 1900004 | -011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + − ANGLES + −

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN W. Thiel DATE 9 APR 63
CHECKED Kawski 10 APR 63
APPROVAL H. Williams 10 APR 63
APPROVAL 10 APR 63
NASA APPROVAL 5/8/63
L. Gehman 5/8/63
MIT APPROVAL May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

POWER SUPPLY AND LOAD PANEL ASSEMBLY

CODE IDENT NO.
SIZE D
1900060
SCALE
SHEET

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

J 0900061 2

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
|---|---|---|---|---|---|
| A | | P/N 1900081, 3200 CY PWR SUPPLY ADDED<br>P/N 1900079, 400 CY PWR SUPPLY ADDED<br>PART NAME (1900060) WAS "PWR CONTROL" | DO 51501 | 25 APR 63 | |
| A1 | | CHANGE IN ACCORDANCE WITH MXC 186712 | MXC 186712 | 23 MAY 63 | PHG |
| A2 | | CHANGE IN ACCORDANCE WITH MXC 187051 | | 11 JUN 63 | H.E.M. |
| B | | CHANGE IN ACCORDANCE WITH MXC 187308 | | 24 JUN 63 | H.E.M. |
| C | | CHANGE IN ACCORDANCE WITH MXC 188136 | | 17 JUL 63 | |
| D | | REPLACED WITH CHANGE BY REV. E | TDRR 02579 | 2 AUG 63 | JGL |

REVISIONS

(M)

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01211 DATE 8 MAY 63

PICTURE INCOMPLETE

**REPLACED WITH CHANGE BY REV. E**

| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | 9 | | | 1015818-420 | SOCKET CONTACTS |
| | | | 9 | | | 1015817-420 | PIN CONTACTS |
| | | | 2 | | | 1015868-90 | CONNECTOR, PLUG-ELEC |
| | | | 2 | | | 1015867-90 | CONNECTOR, RECP ELEC |
| | | | 2 | | | RE65G2R00 | ↑ |
| | | | 1 | | | RE65G4R75 | ↑ |
| | | | 1 | | | RE65G3R09 | (1896981-162) WW PWR |
| | | | 6 | | | RN70B4992F | (1896973-452) FILM |
| | | | 2 | | | RE65G20R0 | RESISTOR, FIXED WW PWR |
| | | | 8 | | | 1015827-010 | NUT, ANCHOR, SELF LOCKING |
| | | | 8 | | | 1006783-44 | SCREW, BUTTON HEAD |
| | | | | | | | |
| | | | 1 | | | ↑ 009 | ↑ |
| | | | 1 | | | ↑ 006 | ↑ |
| | | | 1 | | | ↑ 005 | ↑ |
| | | | 5 | | | 1015873-001 | FUSE HOLER, INDICATING |
| | | | 1 | | | 1015785-010 | CHASSIS SLIDE ASS'Y (LF HAND) |
| | | | 1 | | | 1015785-009 | CHASSIS SLIDE ASS'Y (RH. HAND) |
| | | | 8 | | | 1015831-257 | SCREW-FLAT HEAD, HEX SOCKET, 100° |
| | | | 2 | | | 1900015-041 | HANDLE ASSY. |
| | | | 5 | | | 1015802-4 | RELAY ARMATURE |
| | | | 1 | | | MS3127E-20-16 P | ↑ |
| | | | 1 | | | MS3127E-24-61PW | ↑ |
| | | | 1 | | | MS3127E-24-61P | CONNECTOR, RECP ELEC |
| | | | 2 | | | 1015914-1 | RELAY ARMATURE |
| | | | 4 | | | MS 26572-1 | FUSE HOLDER |
| | | | 9 | | | MS90078-12-1 | FUSE |
| | | | 3 | | | MS90078-15-1 | FUSE |
| | | | 1 | | | 1900079-011 | POWER SUPPLY, 400 CY, 6 AMP, ASSY |
| | | | 1 | | | 1900081-011 | POWER SUPPLY, 3200 CY, 3 AMP, ASSY |
| | | | 4 | | | 1006927 | INDICATOR, ELAPSED TIME |

QUANTITY REQUIRED

LIST OF PARTS AND MATERIALS

| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | 9 | | | 1015817-416 | PIN CONTACTS |
| | | | 9 | | | 1015818-416 | SOCKET, CONTACTS |
| | | | 1 | | | 1015837-001 | RELAY, ARMATURE |
| | | | 1 | | | 1016008-001 | BOLT AND WASHER ASSEMBLY |
| | | | 1 | | | 1016009-001 | BRACKET, MOUNTING |
| | | | 1 | | | RW35V200 | (1896980-208) ↑ |
| | | | 1 | | | RE75G22R6 | (1896982-227) ↑ |
| | | | 1 | | | RE75G26R1 | (1896982-233) ↑ |
| | | | 1 | | | RE75G56R2 | (1896982-265) ↑ |
| | | | 1 | | | RE75G12R4 | (1896981-202) ↑ |
| | | | 2 | | | RE65G34R0 | (1896981-244) ↑ |
| | | | 1 | | | RE65G1910 | (1896981-316) WW |
| | | | 6 | | | RN70B2370F | (1896973-229) RESISTOR, FIXED FILM |
| | | | 1 | | | ↑ -7 | ↑ |
| | | | 1 | | | ↑ -6 | ↑ |
| | | | 1 | | | ↑ -5 | ↑ |
| | | | 1 | | | ↑ -4 | ↑ |
| | | | 1 | | | ↑ -3 | ↑ |
| | | | 1 | | | ↑ -2 | ↑ |
| | | | 1 | | | 1015995-1 | REACTOR |

QUANTITY REQUIRED

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900004 | 1900004 | -011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + − ANGLES + −

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN W. Thiele DATE 9 APR 63
CHECKED Kawaler 10 APR 63
APPROVAL J. Williams 10 APR 63
APPROVAL 10 APR 63
NASA APPROVAL 5/8/63
L. Gelmann 5/8/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

POWER SUPPLY AND LOAD PANEL
ASSEMBLY

CODE IDENT NO.

SIZE D

1900060

SCALE

SHEET

MIL 10780-F

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

7 J1

| INTERNAL CONNECTION | PIN | INTERNAL CONNECTION | PIN |
|---|---|---|---|
| CHASSIS GROUND | A | COIL H0-a | a |
| CONTACT S0-3 | B | COIL H1-a | b |
| CONTACT S0-2 | C | BLANK | c̄ |
| BLANK | D | LEVEL 4 OUTPUT | d |
| COIL S0-a | E | LEVEL 5 OUTPUT | e |
| S1 | F | BLANK | f |
| S2 | G | COIL H2-a | g |
| BLANK | H | H3- | h |
| LEVEL 1 OUTPUT } USE TWISTED | J | H4- | i |
| LEVEL 2 OUTPUT } SHIELDED PAIR | K | H5- | j |
| LEVEL 3 OUTPUT } USE TWISTED | L | H6- | k̄ |
| LEVEL 6 OUTPUT } SHIELDED PAIR | M | H7- | m |
| BLANK | N | H8- | n |
| COIL S3-a | P | BLANK | p̄ |
| S4- | R | BLANK | q |
| S5- | S | COIL H9-a | r |
| S6- | T | FUSE F1-1 | s̄ |
| S7- | U | SHIELD CONNECTION | t |
| S8- | V | | |
| S9- | W | | |
| BLANK | X | | |
| CONTACT H0-3 | Y | | |
| CONTACT H0-2 | Z | | |

8 J2

| INTERNAL CONNECTION | | PIN | INTERNAL CONNECTION | | PIN |
|---|---|---|---|---|---|
| CHANNEL 90-LEVEL | 1 | A | CHANNEL 95-LEVEL | 1 | h |
| | 2 | B | | 2 | i |
| | 3 | C | | 3 | j |
| | 6 | D | | 6 | k̄ |
| | 5 | E | | 5 | m |
| | 4 | F | | 4 | n |
| CHANNEL 91-LEVEL | 1 | G | CHANNEL 96-LEVEL | 1 | p̄ |
| | 2 | H | | 2 | q |
| | 3 | J | | 3 | r |
| | 6 | K | | 6 | s̄ |
| | 5 | L | | 5 | t |
| | 4 | M | | 4 | u |
| CHANNEL 92-LEVEL | 1 | N | CHANNEL 97-LEVEL | 1 | v̄ |
| | 2 | P | | 2 | w̄ |
| | 3 | R | | 3 | x̄ |
| | 6 | S | | 6 | y |
| | 5 | T | | 5 | z̄ |
| | 4 | U | | 4 | AA |
| CHANNEL 93-LEVEL | 1 | V | CHANNEL 98-LEVEL | 1 | BB |
| | 2 | W | | 2 | CC |
| | 3 | X | | 3 | DD |
| | 6 | Y | | 6 | EE |
| | 5 | Z | | 5 | FF |
| | 4 | a | | 4 | GG |
| CHANNEL 94-LEVEL | 1 | b | CHANNEL 99-LEVEL | 1 | HH |
| | 2 | c̄ | | 2 | JJ |
| | 3 | d | | 3 | KK |
| | 6 | e | | 6 | LL |
| | 5 | f | | 5 | MM |
| | 4 | g | | 4 | NN |
| | | | SHIELD CONNECTION | | PP |

9 J3

| INTERNAL CONNECTION | | PIN | INTERNAL CONNECTION | | PIN |
|---|---|---|---|---|---|
| CHANNEL 70-LEVEL | 1 | A | CHANNEL 75-LEVEL | 1 | h |
| | 2 | B | | 2 | i |
| | 3 | C | | 3 | j |
| | 6 | D | | 6 | k̄ |
| | 5 | E | | 5 | m |
| | 4 | F | | 4 | n |
| CHANNEL 71-LEVEL | 1 | G | CHANNEL 76-LEVEL | 1 | p̄ |
| | 2 | H | | 2 | q |
| | 3 | J | | 3 | r |
| | 6 | K | | 6 | s̄ |
| | 5 | L | | 5 | t |
| | 4 | M | | 4 | u |
| CHANNEL 72-LEVEL | 1 | N | CHANNEL 77-LEVEL | 1 | v̄ |
| | 2 | P | | 2 | w̄ |
| | 3 | R | | 3 | x̄ |
| | 6 | S | | 6 | y |
| | 5 | T | | 5 | z̄ |
| | 4 | U | | 4 | AA |
| CHANNEL 73-LEVEL | 1 | V | CHANNEL 78-LEVEL | 1 | BB |
| | 2 | W | | 2 | CC |
| | 3 | X | | 3 | DD |
| | 6 | Y | | 6 | EE |
| | 5 | Z | | 5 | FF |
| | 4 | a | | 4 | GG |
| CHANNEL 74-LEVEL | 1 | b | CHANNEL 79-LEVEL | 1 | HH |
| | 2 | c̄ | | 2 | JJ |
| | 3 | d | | 3 | KK |
| | 6 | e | | 6 | LL |
| | 5 | f | | 5 | MM |
| | 4 | g | | 4 | NN |
| | | | SHIELD CONNECTION | | PP |

10 J4

| INTERNAL CONNECTION | | PIN | INTERNAL CONNECTION | | PIN |
|---|---|---|---|---|---|
| CHANNEL 50-LEVEL | 1 | A | CHANNEL 55-LEVEL | 1 | h |
| | 2 | B | | 2 | i |
| | 3 | C | | 3 | j |
| | 6 | D | | 6 | k̄ |
| | 5 | E | | 5 | m |
| | 4 | F | | 4 | n |
| CHANNEL 51-LEVEL | 1 | G | CHANNEL 56-LEVEL | 1 | p̄ |
| | 2 | H | | 2 | q |
| | 3 | J | | 3 | r |
| | 6 | K | | 6 | s̄ |
| | 5 | L | | 5 | t |
| | 4 | M | | 4 | u |
| CHANNEL 52-LEVEL | 1 | N | CHANNEL 57-LEVEL | 1 | v̄ |
| | 2 | P | | 2 | w̄ |
| | 3 | R | | 3 | x̄ |
| | 6 | S | | 6 | y |
| | 5 | T | | 5 | z̄ |
| | 4 | U | | 4 | AA |
| CHANNEL 53-LEVEL | 1 | V | CHANNEL 58-LEVEL | 1 | BB |
| | 2 | W | | 2 | CC |
| | 3 | X | | 3 | DD |
| | 6 | Y | | 6 | EE |
| | 5 | Z | | 5 | FF |
| | 4 | a | | 4 | GG |
| CHANNEL 54-LEVEL | 1 | b | CHANNEL 59-LEVEL | 1 | HH |
| | 2 | c̄ | | 2 | JJ |
| | 3 | d | | 3 | KK |
| | 6 | e | | 6 | LL |
| | 5 | f | | 5 | MM |
| | 4 | g | | 4 | NN |
| | | | SHIELD CONNECTION | | PP |

11 J5

| INTERNAL CONNECTION | | PIN | INTERNAL CONNECTION | | PIN |
|---|---|---|---|---|---|
| CHANNEL 30-LEVEL | 1 | A | CHANNEL 35-LEVEL | 1 | h |
| | 2 | B | | 2 | i |
| | 3 | C | | 3 | j |
| | 6 | D | | 6 | k̄ |
| | 5 | E | | 5 | m |
| | 4 | F | | 4 | n |
| CHANNEL 31-LEVEL | 1 | G | CHANNEL 36-LEVEL | 1 | p̄ |
| | 2 | H | | 2 | q |
| | 3 | J | | 3 | r |
| | 6 | K | | 6 | s̄ |
| | 5 | L | | 5 | t |
| | 4 | M | | 4 | u |
| CHANNEL 32-LEVEL | 1 | N | CHANNEL 37-LEVEL | 1 | v̄ |
| | 2 | P | | 2 | w̄ |
| | 3 | R | | 3 | x̄ |
| | 6 | S | | 6 | y |
| | 5 | T | | 5 | z̄ |
| | 4 | U | | 4 | AA |
| CHANNEL 33-LEVEL | 1 | V | CHANNEL 38-LEVEL | 1 | BB |
| | 2 | W | | 2 | CC |
| | 3 | X | | 3 | DD |
| | 6 | Y | | 6 | EE |
| | 5 | Z | | 5 | FF |
| | 4 | a | | 4 | GG |
| CHANNEL 34-LEVEL | 1 | b | CHANNEL 39-LEVEL | 1 | HH |
| | 2 | c̄ | | 2 | JJ |
| | 3 | d | | 3 | KK |
| | 6 | e | | 6 | LL |
| | 5 | f | | 5 | MM |
| | 4 | g | | 4 | NN |
| | | | SHIELD CONNECTION | | PP |

12 J6

| INTERNAL CONNECTION | | PIN | INTERNAL CONNECTION | | PIN |
|---|---|---|---|---|---|
| CHANNEL 10-LEVEL | 1 | A | CHANNEL 15-LEVEL | 1 | h |
| | 2 | B | | 2 | i |
| | 3 | C | | 3 | j |
| | 6 | D | | 6 | k̄ |
| | 5 | E | | 5 | m |
| | 4 | F | | 4 | n |
| CHANNEL 11-LEVEL | 1 | G | CHANNEL 16-LEVEL | 1 | p̄ |
| | 2 | H | | 2 | q |
| | 3 | J | | 3 | r |
| | 6 | K | | 6 | s̄ |
| | 5 | L | | 5 | t |
| | 4 | M | | 4 | u |
| CHANNEL 12-LEVEL | 1 | N | CHANNEL 17-LEVEL | 1 | v̄ |
| | 2 | P | | 2 | w̄ |
| | 3 | R | | 3 | x̄ |
| | 6 | S | | 6 | y |
| | 5 | T | | 5 | z̄ |
| | 4 | U | | 4 | AA |
| CHANNEL 13-LEVEL | 1 | V | CHANNEL 18-LEVEL | 1 | BB |
| | 2 | W | | 2 | CC |
| | 3 | X | | 3 | DD |
| | 6 | Y | | 6 | EE |
| | 5 | Z | | 5 | FF |
| | 4 | a | | 4 | GG |
| CHANNEL 14-LEVEL | 1 | b | CHANNEL 19-LEVEL | 1 | HH |
| | 2 | c̄ | | 2 | JJ |
| | 3 | d | | 3 | KK |
| | 6 | e | | 6 | LL |
| | 5 | f | | 5 | MM |
| | 4 | g | | 4 | NN |
| | | | SHIELD CONNECTION | | PP |

13 J7

| INTERNAL CONNECTION | | PIN | INTERNAL CONNECTION | | PIN |
|---|---|---|---|---|---|
| CHANNEL 80-LEVEL | 1 | A | CHANNEL 85-LEVEL | 1 | h |
| | 2 | B | | 2 | i |
| | 3 | C | | 3 | j |
| | 6 | D | | 6 | k̄ |
| | 5 | E | | 5 | m |
| | 4 | F | | 4 | n |
| CHANNEL 81-LEVEL | 1 | G | CHANNEL 86-LEVEL | 1 | p̄ |
| | 2 | H | | 2 | q |
| | 3 | J | | 3 | r |
| | 6 | K | | 6 | s̄ |
| | 5 | L | | 5 | t |
| | 4 | M | | 4 | u |
| CHANNEL 82-LEVEL | 1 | N | CHANNEL 87-LEVEL | 1 | v̄ |
| | 2 | P | | 2 | w̄ |
| | 3 | R | | 3 | x̄ |
| | 6 | S | | 6 | y |
| | 5 | T | | 5 | z̄ |
| | 4 | U | | 4 | AA |
| CHANNEL 83-LEVEL | 1 | V | CHANNEL 88-LEVEL | 1 | BB |
| | 2 | W | | 2 | CC |
| | 3 | X | | 3 | DD |
| | 6 | Y | | 6 | EE |
| | 5 | Z | | 5 | FF |
| | 4 | a | | 4 | GG |
| CHANNEL 84-LEVEL | 1 | b | CHANNEL 89-LEVEL | 1 | HH |
| | 2 | c̄ | | 2 | JJ |
| | 3 | d | | 3 | KK |
| | 6 | e | | 6 | LL |
| | 5 | f | | 5 | MM |
| | 4 | g | | 4 | NN |
| | | | SHIELD CONNECTION | | PP |

14 J8

| INTERNAL CONNECTION | | PIN | INTERNAL CONNECTION | | PIN |
|---|---|---|---|---|---|
| CHANNEL 60-LEVEL | 1 | A | CHANNEL 65-LEVEL | 1 | h |
| | 2 | B | | 2 | i |
| | 3 | C | | 3 | j |
| | 6 | D | | 6 | k̄ |
| | 5 | E | | 5 | m |
| | 4 | F | | 4 | n |
| CHANNEL 61-LEVEL | 1 | G | CHANNEL 66-LEVEL | 1 | p̄ |
| | 2 | H | | 2 | q |
| | 3 | J | | 3 | r |
| | 6 | K | | 6 | s̄ |
| | 5 | L | | 5 | t |
| | 4 | M | | 4 | u |
| CHANNEL 62-LEVEL | 1 | N | CHANNEL 67-LEVEL | 1 | v̄ |
| | 2 | P | | 2 | w̄ |
| | 3 | R | | 3 | x̄ |
| | 6 | S | | 6 | y |
| | 5 | T | | 5 | z̄ |
| | 4 | U | | 4 | AA |
| CHANNEL 63-LEVEL | 1 | V | CHANNEL 68-LEVEL | 1 | BB |
| | 2 | W | | 2 | CC |
| | 3 | X | | 3 | DD |
| | 6 | Y | | 6 | EE |
| | 5 | Z | | 5 | FF |
| | 4 | a | | 4 | GG |
| CHANNEL 64-LEVEL | 1 | b | CHANNEL 69-LEVEL | 1 | HH |
| | 2 | c̄ | | 2 | JJ |
| | 3 | d | | 3 | KK |
| | 6 | e | | 6 | LL |
| | 5 | f | | 5 | MM |
| | 4 | g | | 4 | NN |
| | | | SHIELD CONNECTION | | PP |

M

REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD |
|---|---|---|---|---|---|
| A | | CHANGE IN ACCORDANCE WITH MXC-186484 | MXC-86484 | 23 MAY 63 | F. I. J.E.G. |
| A1 | | CHANGE IN ACCORDANCE WITH MXC 186874 PER TDRR 03718 | | 3 JUNE 63 | |

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01255 DATE 15 May 63

| 1900048 | 1900034 |
|---|---|
| NEXT ASSY | USED ON |
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN E. LITZOW 23 APRIL 63
CHECKED W Diehl 30 APR 63
APPROVAL K P James
APPROVAL 1 MAY 63
NASA APPROVAL 5/15/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

SWITCH CROSSBAR

CODE IDENT NO.
SIZE E
1900061
SCALE
SHEET 2 OF 3

1900061 B

INCHES
PHOTOGRAPHIC SCALE ONLY

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD |
| A | | CHANGE IN ACCORDANCE WITH MXC-186484 | MXC-186484 | 23 MAY 63 | J.E. |
| A1 | | CHANGE IN ACCORDANCE WITH MXC 186874 PER TDRR 03718 | | 3 Jun 63 | |

[illegible]

| INTERNAL CONNECTION | | | PIN | INTERNAL CONNECTION | | | PIN |
|---|---|---|---|---|---|---|---|
| CHANNEL | 40-LEVEL | 1 | A | CHANNEL | 45-LEVEL | 1 | h |
| | | 2 | B | | | 2 | i |
| | | 3 | C | | | 3 | j |
| | | 6 | D | | | 6 | k̄ |
| | | 5 | E | | | 5 | m |
| | | 4 | F | | | 4 | n |
| CHANNEL | 41-LEVEL | 1 | G | CHANNEL | 46-LEVEL | 1 | p̄ |
| | | 2 | H | | | 2 | q |
| | | 3 | J | | | 3 | r |
| | | 6 | K | | | 6 | s̄ |
| | | 5 | L | | | 5 | t |
| | | 4 | M | | | 4 | u |
| CHANNEL | 42-LEVEL | 1 | N | CHANNEL | 47-LEVEL | 1 | v̄ |
| | | 2 | P | | | 2 | w̄ |
| | | 3 | R | | | 3 | x̄ |
| | | 6 | S | | | 6 | y |
| | | 5 | T | | | 5 | z̄ |
| | | 4 | U | | | 4 | AA |
| CHANNEL | 43-LEVEL | 1 | V | CHANNEL | 48-LEVEL | 1 | BB |
| | | 2 | W | | | 2 | CC |
| | | 3 | X | | | 3 | DD |
| | | 6 | Y | | | 6 | EE |
| | | 5 | Z | | | 5 | FF |
| | | 4 | a | | | 4 | GG |
| CHANNEL | 44-LEVEL | 1 | b | CHANNEL | 49-LEVEL | 1 | HH |
| | | 2 | c̄ | | | 2 | JJ |
| | | 3 | d | | | 3 | KK |
| | | 6 | e | | | 6 | LL |
| | | 5 | f | | | 5 | MM |
| | | 4 | g | | | 4 | NN |
| | | | | SHIELD CONNECTION | | | PP |

16 J10

| INTERNAL CONNECTION | | | PIN | INTERNAL CONNECTION | | | PIN |
|---|---|---|---|---|---|---|---|
| CHANNEL | 20-LEVEL | 1 | A | CHANNEL | 25-LEVEL | 1 | h |
| | | 2 | B | | | 2 | i |
| | | 3 | C | | | 3 | j |
| | | 6 | D | | | 6 | k̄ |
| | | 5 | E | | | 5 | m |
| | | 4 | F | | | 4 | n |
| CHANNEL | 21-LEVEL | 1 | G | CHANNEL | 26-LEVEL | 1 | p̄ |
| | | 2 | H | | | 2 | q |
| | | 3 | J | | | 3 | r |
| | | 6 | K | | | 6 | s̄ |
| | | 5 | L | | | 5 | t |
| | | 4 | M | | | 4 | u |
| CHANNEL | 22-LEVEL | 1 | N | CHANNEL | 27-LEVEL | 1 | v̄ |
| | | 2 | P | | | 2 | w̄ |
| | | 3 | R | | | 3 | x̄ |
| | | 6 | S | | | 6 | y |
| | | 5 | T | | | 5 | z̄ |
| | | 4 | U | | | 4 | AA |
| CHANNEL | 23-LEVEL | 1 | V | CHANNEL | 28-LEVEL | 1 | BB |
| | | 2 | W | | | 2 | CC |
| | | 3 | X | | | 3 | DD |
| | | 6 | Y | | | 6 | EE |
| | | 5 | Z | | | 5 | FF |
| | | 4 | a | | | 4 | GG |
| CHANNEL | 24-LEVEL | 1 | b | CHANNEL | 29-LEVEL | 1 | HH |
| | | 2 | c̄ | | | 2 | JJ |
| | | 3 | d | | | 3 | KK |
| | | 6 | e | | | 6 | LL |
| | | 5 | f | | | 5 | MM |
| | | 4 | g | | | 4 | NN |
| | | | | SHIELD CONNECTION | | | PP |

17 J11

| INTERNAL CONNECTION | | | PIN | INTERNAL CONNECTION | | | PIN |
|---|---|---|---|---|---|---|---|
| CHANNEL | 00-LEVEL | 1 | A | CHANNEL | 05-LEVEL | 1 | h |
| | | 2 | B | | | 2 | i |
| | | 3 | C | | | 3 | j |
| | | 6 | D | | | 6 | k̄ |
| | | 5 | E | | | 5 | m |
| | | 4 | F | | | 4 | n |
| CHANNEL | 01-LEVEL | 1 | G | CHANNEL | 06-LEVEL | 1 | p̄ |
| | | 2 | H | | | 2 | q |
| | | 3 | J | | | 3 | r |
| | | 6 | K | | | 6 | s̄ |
| | | 5 | L | | | 5 | t |
| | | 4 | M | | | 4 | u |
| CHANNEL | 02-LEVEL | 1 | N | CHANNEL | 07-LEVEL | 1 | v̄ |
| | | 2 | P | | | 2 | w̄ |
| | | 3 | R | | | 3 | x̄ |
| | | 6 | S | | | 6 | y |
| | | 5 | T | | | 5 | z̄ |
| | | 4 | U | | | 4 | AA |
| CHANNEL | 03-LEVEL | 1 | V | CHANNEL | 08-LEVEL | 1 | BB |
| | | 2 | W | | | 2 | CC |
| | | 3 | X | | | 3 | DD |
| | | 6 | Y | | | 6 | EE |
| | | 5 | Z | | | 5 | FF |
| | | 4 | a | | | 4 | GG |
| CHANNEL | 04-LEVEL | 1 | b | CHANNEL | 09-LEVEL | 1 | HH |
| | | 2 | c̄ | | | 2 | JJ |
| | | 3 | d | | | 3 | KK |
| | | 6 | e | | | 6 | LL |
| | | 5 | f | | | 5 | MM |
| | | 4 | g | | | 4 | NN |
| | | | | SHIELD CONNECTION | | | PP |

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01255 DATE 15 Aug 63

| | |
|---|---|
| 1900048 | 1900C04 |
| NEXT ASSY | USED ON |
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN E. LITZOW DATE 23 APRIL 63
CHECKED H. Diehl 30 APR 63
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

SWITCH, CROSS BAR

CODE IDENT NO.
SIZE E
1900061
SCALE
SHEET 3 of 3

A1 1900061

INCHES
PHOTOGRAPHIC SCALE ONLY

REQUIREMENTS:

INTERPRET DWG. IN ACCORDANCE WITH MIL-D-70327.

UNIT SHALL BE A 10X10X6 TYPE F BASIC CROSSBAR SWITCH MOUNTED IN AN ENCLOSURE PER THIS DRAWING ALL CONTROL AND SIGNAL LINES ARE TO BE WIRED TO EXTERNAL CONNECTORS.

CONNECTORS: VENDOR SHALL SUPPLY AND WIRE UNIT WITH CONNECTORS AS LISTED IN THE PIN LIST. CONNECTOR LOCATION IS AS SHOWN ON THE FRONT VIEW TWISTED SHIELDED WIRE PAIRS SHALL BE USED TO WIRE THE INPUT AND OUTPUT SIGNAL LEVELS. THE SIGNAL LEVELS ARE 1&2 AND 3&6.

TWO COPIES OF SERVICE MANUALS CONTAINING A SPARE PARTS LIST, OPERATING INSTRUCTIONS, & MAINTENANCE INSTRUCTIONS SHALL BE SUPPLIED WITH EACH UNIT. A COPY OF ALL INSPECTION TEST DATA SHALL BE SUPPLIED WITH EACH UNIT.

ISOLATION: POWER INPUT SHALL BE ELECTRICALLY ISOLATED FROM THE CHASSIS. RESISTANCE BETWEEN CROSSBAR SWITCH CONDUCTORS AND FRAME OR BETWEEN CROSSBAR SWITCH CONDUCTORS SHALL BE 100 MEGOHMS MINIMUM AT 500 VDC.

EQUIPMENT SHALL BE FREE OF BURRS AND SHARP EDGES ON THE EXTERNAL SURFACE.

THE SUPPLIER'S NAME, ADDRESS, AND PART NUMBER MUST BE PLACED ON THE OUTSIDE SURFACE OF THE REAR PLATE PER ND-1002122. THIS INFORMATION IS NOT TO APPEAR ON THE FRONT PANEL.

ALL ACTUATOR AND RELAY COILS SHALL BE EQUIPPED WITH DIODE SURGE SUPPRESSORS NASA NO. 1896966-290.

WIRE: USE POLY VINYL 100°C WIRE, NO SMALLER THAN 24 AWG.

POWER: THE UNIT SHALL BE OPERABLE OVER A RANGE OF INPUT VOLTAGE OF 22 TO 30 VOLTS DC. AC SPARK PLUG WILL SUPPLY 27 VDC NOMINAL VOLTAGE TO THE UNIT.

FUSE: THE 27 VDC LO LINE SHALL BE FUSED WITH A $\frac{1}{4}$ AMP. FUSE. THE FUSE SHALL APPEAR ON THE FRONT PANEL, WITH THE LOCATION BEING OPTIONAL.

BLOCKING DIODE: A BLOCKING DIODE NASA NO. 1896966-012 SHALL BE INSERTED IN THE 27 VDC LO LINE TO PREVENT REVERSE VOLTAGE FROM BEING APPLIED ACROSS THE SUPPRESSION DIODES, WHICH ARE BEING PLACED ACROSS ALL COILS.

THE EQUIPMENT SHALL PASS ALL TESTS CALLED OUT IN ATP-1900061.

1▷ SIDES OF CHASSIS LOCATED BY 17 INCH DIMENSION MUST BE PARALLEL WITHIN 0.031 AND PERPENDICULAR TO THE FRONT PANEL WITHIN 0.062.

2▷ FINISH: ALODINE PER MIL-C-5541 ALL EXTERIOR SURFACES. (ES-591)

3▷ CHARACTERS PER ND-1002122 CHARACTER HEIGHT 1/8 INCH UNLESS OTHERWISE SPECIFIED. SILK SCREEN, USING SEMI-GLOSS ENAMEL, INSTRUMENT BLACK, CENTRALIZE AS SHOWN APPLY PER ND1002019.

4▷ THERE SHALL BE NO PROTRUSIONS OUTSIDE OF THE CHASSIS IN THIS AREA.

5▷ MARKING OF REFERENCE DESIGNATION CHARACTERS OF DIMENSIONS SHOWN TO BE APPLIED PER ND1002019.

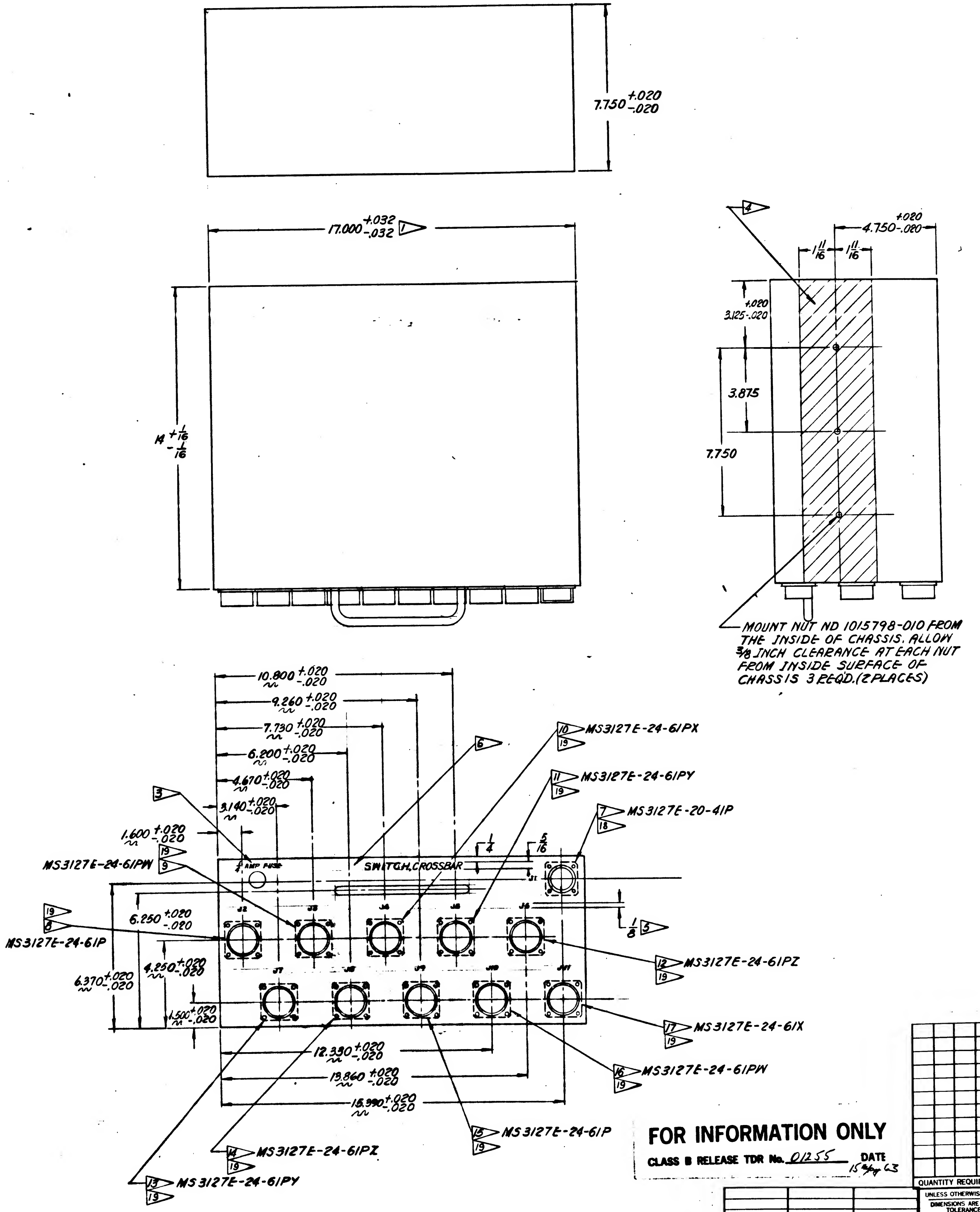
6▷ FRONT PANEL MATERIAL, 3/16 ALUMINUM QQ-A-318, TEMPER H-32 5052-H32 (ES-2105).

DRAWINGS FOR REF.
SCHEMATIC DIAGRAM ELECTRICAL 1900078

18▷ MINIMUM MOUNTING HOLE SIZE SHALL BE 1.531 INCHES.

19▷ MINIMUM MOUNTING HOLE SIZE SHALL BE 1.777 INCHES.

ORIGINAL SOURCE OF SUPPLY:
JAMES CUNNINGHAM SON & CO. INC.
HONEOYE FALLS, N.Y.



| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD. |
| A | | (1) CHANGE IN ACCORDANCE WITH MXC-186484 | MXC-186484 | 23 MAY 63 | A. N.<br>J.E.G. |
| A1 | F-8<br>C-8<br>C-5 | 1. ADDED "PER ND-1002122" 2. "CHARACTERS PER ND-1002122" WAS "CHARACTERS (FUTURE DEMIBOLD)." 3. "SWITCH, CROSSBAR" WAS "SWITCH, BOX". 4. TITLE WAS "SWITCH, BOX". | MXC 186874 | 3 JUNE 63 | J.E.G. |
| B | | CHANGE IN ACCORDANCE WITH MXC 187472 | | 25 [illegible] | [illegible] |
| C | | CHANGE IN ACCORDANCE WITH MXC187928 PER TDRR 03718 | | [illegible] | [illegible] |

| | | |
|---|---|---|
| C | A1 | A1 |
| SHEET 1 | SHEET 2 | SHEET 3 |
| REVISION STATUS OF SHEETS | | |

FOR INFORMATION ONLY
CLASS B RELEASE TDR No. 01255 DATE 15 May 63

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION | |
| QUANTITY REQUIRED | | | | LIST OF PARTS AND MATERIALS | | | |

| | | |
|---|---|---|
| 1900048 | 1900004 | |
| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
| APPLICATION | | |

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS +1/64 -1/64 DECIMALS +.005 -.005 ANGLES +2° -2°
DO NOT SCALE THIS DRAWING
MATERIAL 6▷
CONTRACT NAS9-497

AC SPARK PLUG DIVISION. GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN E. LITZOW DATE 23 APRIL 63
CHECKED [illegible] 30 APR 63
APPROVAL K V [illegible]
APPROVAL [illegible] 1 MAY 63
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

SWIT[illegible] [illegible]SSBAR

CODE IDENT NO SIZE E 1900061
SCALE 1/2 SHEET OF 3

1900061 B

REQUIREMENTS:

INTERPRET DWG. IN ACCORDANCE WITH MIL-D-70327.

UNIT SHALL BE A 10X10X6 TYPE F BASIC CROSSBAR SWITCH MOUNTED IN AN ENCLOSURE PER THIS DRAWING ALL CONTROL AND SIGNAL LINES ARE TO BE WIRED TO EXTERNAL CONNECTORS.

CONNECTORS: VENDOR SHALL SUPPLY AND WIRE UNIT WITH CONNECTORS AS LISTED IN THE PIN LIST. CONNECTOR LOCATION IS AS SHOWN ON THE FRONT VIEW TWISTED SHIELDED WIRE PAIRS SHALL BE USED TO WIRE THE INPUT AND OUTPUT SIGNAL LEVELS. THE SIGNAL LEVELS ARE 1&2 AND 3&6.

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EQUIPMENT SHALL BE FREE OF BURRS AND SHARP EDGES ON THE EXTERNAL SURFACE.

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ALL ACTUATOR AND RELAY COILS SHALL BE EQUIPPED WITH DIODE SURGE SUPPRESSORS NASA NO. 1896966-290.

WIRE: USE POLY VINYL 100°C WIRE, NO SMALLER THAN 24 AWG.

POWER: THE UNIT SHALL BE OPERABLE OVER A RANGE OF INPUT VOLTAGE OF 22 TO 30 VOLTS DC. AC SPARK PLUG WILL SUPPLY 27 VDC NOMINAL VOLTAGE TO THE UNIT.

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THE EQUIPMENT SHALL PASS ALL TESTS CALLED OUT IN ATP-1900061.

1 > SIDES OF CHASSIS LOCATED BY 17 INCH DIMENSION MUST BE PARALLEL WITHIN 0.031 AND PERPENDICULAR TO THE FRONT PANEL WITHIN 0.062.

2 > FINISH: ALODINE PER MIL-C-5541 ALL EXTERIOR SURFACES. (ES-591)

3 > CHARACTERS PER ND-1002122 CHARACTER HEIGHT 1/8 INCH UNLESS OTHERWISE SPECIFIED. SILK SCREEN, USING SEMI-GLOSS ENAMEL, INSTRUMENT BLACK, CENTRALIZE AS SHOWN APPLY PER ND1002019.

4 > THERE SHALL BE NO PROTRUSIONS OUTSIDE OF THE CHASSIS IN THIS AREA.

5 > MARKING OF REFERENCE DESIGNATION CHARACTERS OF DIMENSIONS SHOWN TO BE APPLIED PER ND1002019.

6 > FRONT PANEL MATERIAL, 3/16 ALUMINUM QQ-A-318, TEMPER H-32 5052-H32 (ES-2105).

DRAWINGS FOR REF.
SCHEMATIC DIAGRAM ELECTRICAL 1900078

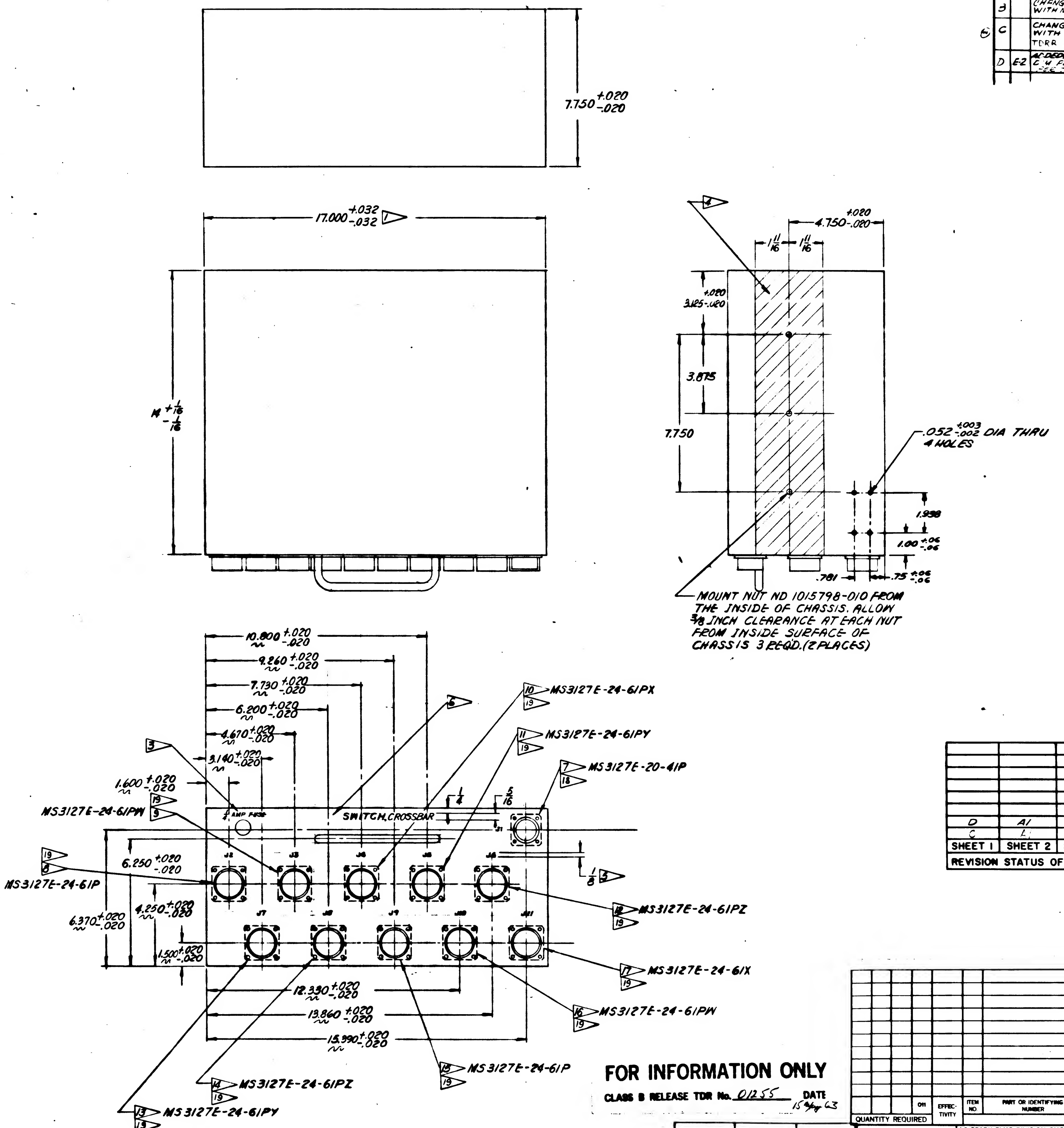
18 > MINIMUM MOUNTING HOLE SIZE SHALL BE 1.531 INCHES.

19 > MINIMUM MOUNTING HOLE SIZE SHALL BE 1.777 INCHES.

ORIGINAL SOURCE OF SUPPLY:
JAMES CUNNINGHAM SON & CO. INC.
HONEOYE FALLS, N.Y.

REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
|---|---|---|---|---|---|
| A |  | (1) CHANGE IN ACCORDANCE WITH MXC-186484 | MXC-186484 | 23 MAY 63 | A.N. J.E.G. |
| A1 | F-8<br>C-8<br>C-5 | 1. ADDED "PER ND-1002122"<br>2. "CHARACTERS PER ND-1002122" WAS "CHARACTERS (FUTURE DEMIBOLD)." 3 SWITCH, CROSSBAR WAS "SWITCH, BOX". 4. TITLE WAS SWITCH, BOX." | VXC 166874 | 3 JUNE 63 | J.E.G. |
| B |  | CHANGE IN ACCORDANCE WITH MXC 187472 |  | 25 JUN 63 | [illegible] |
| C |  | CHANGE IN ACCORDANCE WITH MXC187928 PER TDRR [illegible] |  | 5 JULY 63 | [illegible] |
| D | E-2 | ADDED (4) .052 HOLES & ASSOC DIM PER MXC 192075 [illegible] |  | 11 [illegible] 63 | R.D. |



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|---|---|---|
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| | | |
| | | |
| | | |
| | | |
| | | |
| D | A1 | A1 |
| C | A1 | A1 |
| SHEET 1 | SHEET 2 | SHEET 3 |

REVISION STATUS OF SHEETS

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01255 DATE 15 May 63

| QUANTITY REQUIRED |  |  | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900048 | 1900004 |  |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS +1/64 -1/64
DECIMALS +.005 -.005
ANGLES +2° -2°
DO NOT SCALE THIS DRAWING

MATERIAL 6 >

CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN

DRAWN E. LITZOW DATE 23 APRIL 63
CHECKED [illegible] 30 APR 63
APPROVAL [illegible]
APPROVAL [illegible] 1 MAY 63
NASA APPROVAL [illegible] 5/15/63
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SWITCH, CROSSBAR

CODE IDENT NO
SIZE E
1900061
SCALE 1/2
SHEET 1 OF 3

REQUIREMENTS:

INTERPRET DWG. IN ACCORDANCE WITH MIL-D-70327.

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2 ▷ FINISH: ALODINE PER MIL-C-5541 ALL EXTERIOR SURFACES. (ES-591)

3 ▷ CHARACTERS PER ND-1002122 CHARACTER HEIGHT 1/8 INCH UNLESS OTHERWISE SPECIFIED. SILK SCREEN, USING SEMI-GLOSS ENAMEL, INSTRUMENT BLACK, CENTRALIZE AS SHOWN APPLY PER ND1002019.

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5 ▷ MARKING OF REFERENCE DESIGNATION CHARACTERS OF DIMENSIONS SHOWN TO BE APPLIED PER ND1002019.

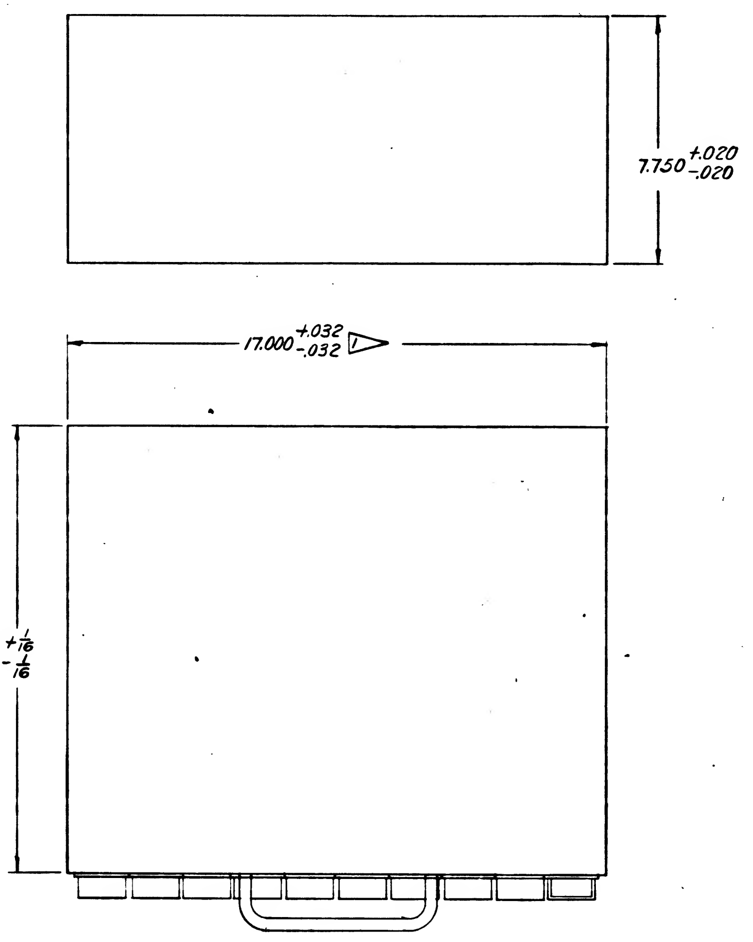
6 ▷ FRONT PANEL MATERIAL, 3/16 ALUMINUM QQ-A-318, TEMPER H-32 5052-H32 (ES-2105).

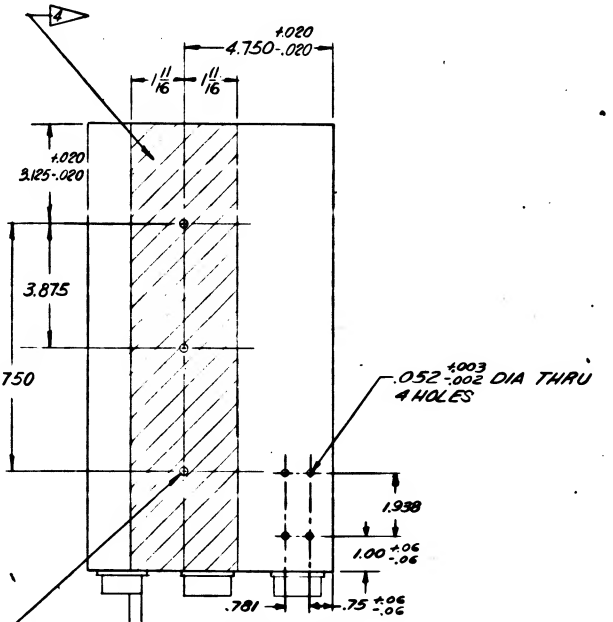
DRAWINGS FOR REF.
SCHEMATIC DIAGRAM ELECTRICAL 1900078

18 ▷ MINIMUM MOUNTING HOLE SIZE SHALL BE 1.531 INCHES.

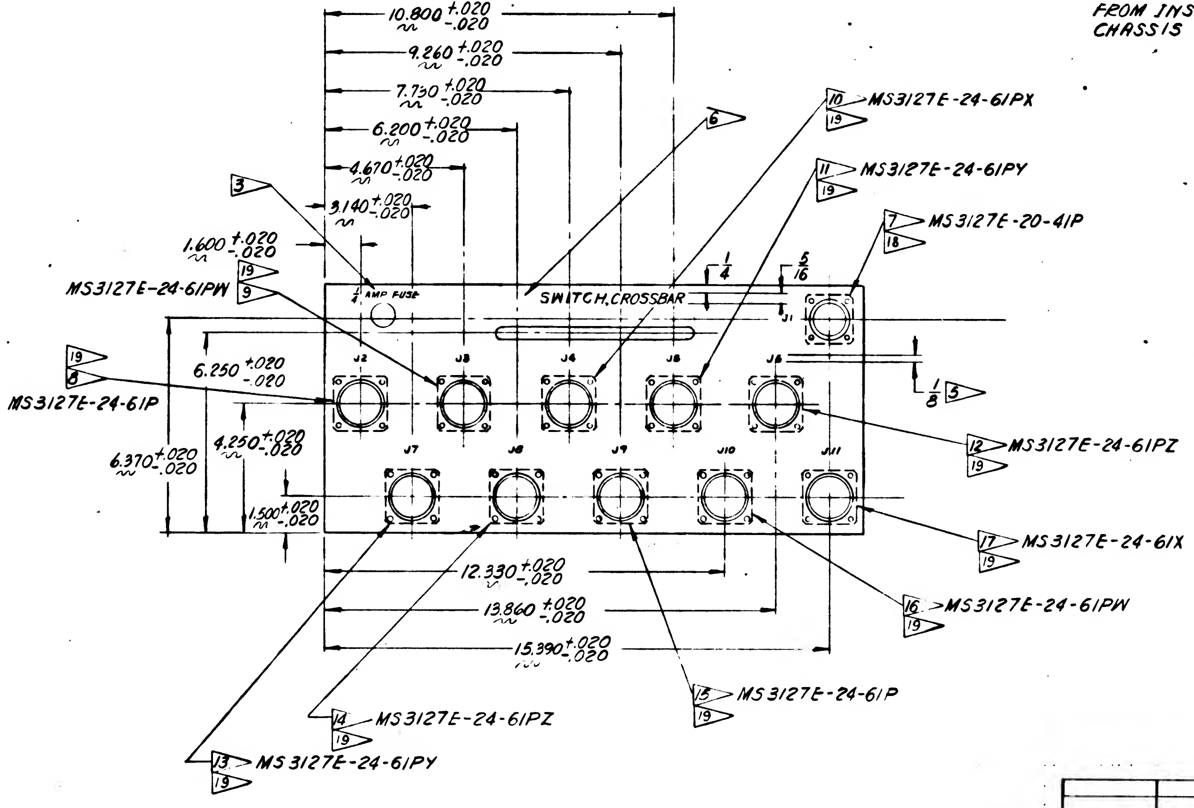
19 ▷ MINIMUM MOUNTING HOLE SIZE SHALL BE 1.777 INCHES

ORIGINAL SOURCE OF SUPPLY:
JAMES CUNNINGHAM SON & CO. INC.
HONEOYE FALLS, N.Y.





MOUNT NUT ND 1015798-010 FROM THE INSIDE OF CHASSIS. ALLOW 3/8 INCH CLEARANCE AT EACH NUT FROM INSIDE SURFACE OF CHASSIS 3 REQD. (2 PLACES)



REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD. |
|---|---|---|---|---|---|
| A |  | (1) CHANGE IN ACCORDANCE WITH MXC-186484 | MXC-186484 | 23 MAY 63 | A.N. J.E.G. |
| A1 | F-8<br>C-8<br>C-5 | 1 ADDED "PER ND-1002122" 2. "CHARACTERS PER ND-1002122" WAS "CHARACTERS (FUTURE DEMIBOLD)" 3 "SWITCH, CROSSBAR" WAS "SWITCH, BOX" 4. TITLE WAS "SWITCH, BOX" | MXC 186874 | 3 JUNE 63 | J.E.G. |
| B |  | CHANGE IN ACCORDANCE WITH MXC 187472 |  | 25 JUN 63 | F.E.M. ARS |
| C |  | CHANGE IN ACCORDANCE WITH MXC187928 PER TDRR 03718 |  | 15 JULY 63 | J.T.R. |
|  |  |  |  | [illegible] | WN |
| D | E-2 | ADDED (4) .052 HOLES & ASSOC DIM PER MXC 192075 [illegible] |  | 11 18 63 | KV R.D. |
| E | F-8 | UPGRADED TO CLASS A & REVISED PER TDRR 15777 |  | 29 JAN 65 | JWP CW |

|  |  |  |
|---|---|---|
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
| E | E | E |
| D | A1 | A1 |
| C | A1 | A1 |
| SHEET 1 | SHEET 2 | SHEET 3 |

REVISION STATUS OF SHEETS

| 011 | EFFECTIVITY | ITEM NO | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|

QUANTITY REQUIRED
LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900048 | 1900004 |  |

APPLICATION
THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS +.005 -.005 ANGLES +2° -2°
DO NOT SCALE THIS DRAWING
MATERIAL 6 ▷
CONTRACT NAS9-497

AC SPARK PLUG DIVISION GMC
MILWAUKEE WISCONSIN
ACSP PN
DRAWN E. LITZOW DATE 23 APR 63
CHECKED 30 APR 63
APPROVAL
APPROVAL
NASA APPROVAL 5/15/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

SWITCH, CROSSBAR

CODE IDENT NO
SIZE E
1900061
SCALE 1:2
SHEET 1 OF 3

7 J1

| INTERNAL CONNECTION | PIN | INTERNAL CONNECTION | PIN |
|---|---|---|---|
| CHASSIS GROUND | A | COIL H0-a | a |
| CONTACT S0-3 | B | COIL H1-a | b |
| CONTACT S0-2 | C | BLANK | c̄ |
| BLANK | D | LEVEL 4 OUTPUT | d |
| COIL S0-a | E | LEVEL 5 OUTPUT | e |
| S1 | F | BLANK | f |
| S2 | G | COIL H2-a | g |
| BLANK | H | H3- | h |
| LEVEL 1 OUTPUT } USE TWISTED | J | H4- | i |
| LEVEL 2 OUTPUT } SHIELDED PAIR | K | H5- | j |
| LEVEL 3 OUTPUT } USE TWISTED | L | H6- | k̄ |
| LEVEL 6 OUTPUT } SHIELDED PAIR | M | H7- | m |
| BLANK | N | H8- | n |
| COIL S3-a | P | BLANK | p̄ |
| S4- | R | BLANK | q |
| S5- | S | COIL H9-a | r |
| S6- | T | FUSE F1-1 | s̄ |
| S7- | U | SHIELD CONNECTION | t |
| S8- | V | | |
| S9- | W | | |
| BLANK | X | | |
| CONTACT H0-3 | Y | | |
| CONTACT H0-2 | Z | | |

8 J2

| INTERNAL CONNECTION | PIN | INTERNAL CONNECTION | PIN |
|---|---|---|---|
| CHANNEL 90-LEVEL 1 | A | CHANNEL 95-LEVEL 1 | h |
| 2 | B | 2 | i |
| 3 | C | 3 | j |
| 6 | D | 6 | k̄ |
| 5 | E | 5 | m |
| 4 | F | 4 | n |
| CHANNEL 91-LEVEL 1 | G | CHANNEL 96-LEVEL 1 | p̄ |
| 2 | H | 2 | q |
| 3 | J | 3 | r |
| 6 | K | 6 | s̄ |
| 5 | L | 5 | t |
| 4 | M | 4 | u |
| CHANNEL 92-LEVEL 1 | N | CHANNEL 97-LEVEL 1 | v̄ |
| 2 | P | 2 | w̄ |
| 3 | R | 3 | x̄ |
| 6 | S | 6 | y |
| 5 | T | 5 | z̄ |
| 4 | U | 4 | AA |
| CHANNEL 93-LEVEL 1 | V | CHANNEL 98-LEVEL 1 | BB |
| 2 | W | 2 | CC |
| 3 | X | 3 | DD |
| 6 | Y | 6 | EE |
| 5 | Z | 5 | FF |
| 4 | a | 4 | GG |
| CHANNEL 94-LEVEL 1 | b | CHANNEL 99-LEVEL 1 | HH |
| 2 | c̄ | 2 | JJ |
| 3 | d | 3 | KK |
| 6 | e | 6 | LL |
| 5 | f | 5 | MM |
| 4 | g | 4 | NN |
| | | SHIELD CONNECTION | PP |

9 J3

| INTERNAL CONNECTION | PIN | INTERNAL CONNECTION | PIN |
|---|---|---|---|
| CHANNEL 70-LEVEL 1 | A | CHANNEL 75-LEVEL 1 | h |
| 2 | B | 2 | i |
| 3 | C | 3 | j |
| 6 | D | 6 | k̄ |
| 5 | E | 5 | m |
| 4 | F | 4 | n |
| CHANNEL 71-LEVEL 1 | G | CHANNEL 76-LEVEL 1 | p̄ |
| 2 | H | 2 | q |
| 3 | J | 3 | r |
| 6 | K | 6 | s̄ |
| 5 | L | 5 | t |
| 4 | M | 4 | u |
| CHANNEL 72-LEVEL 1 | N | CHANNEL 77-LEVEL 1 | v̄ |
| 2 | P | 2 | w̄ |
| 3 | R | 3 | x̄ |
| 6 | S | 6 | y |
| 5 | T | 5 | z̄ |
| 4 | U | 4 | AA |
| CHANNEL 73-LEVEL 1 | V | CHANNEL 78-LEVEL 1 | BB |
| 2 | W | 2 | CC |
| 3 | X | 3 | DD |
| 6 | Y | 6 | EE |
| 5 | Z | 5 | FF |
| 4 | a | 4 | GG |
| CHANNEL 74-LEVEL 1 | b | CHANNEL 79-LEVEL 1 | HH |
| 2 | c̄ | 2 | JJ |
| 3 | d | 3 | KK |
| 6 | e | 6 | LL |
| 5 | f | 5 | MM |
| 4 | g | 4 | NN |
| | | SHIELD CONNECTION | PP |

10 J4

| INTERNAL CONNECTION | PIN | INTERNAL CONNECTION | PIN |
|---|---|---|---|
| CHANNEL 50-LEVEL 1 | A | CHANNEL 55-LEVEL 1 | h |
| 2 | B | 2 | i |
| 3 | C | 3 | j |
| 6 | D | 6 | k̄ |
| 5 | E | 5 | m |
| 4 | F | 4 | n |
| CHANNEL 51-LEVEL 1 | G | CHANNEL 56-LEVEL 1 | p̄ |
| 2 | H | 2 | q |
| 3 | J | 3 | r |
| 6 | K | 6 | s̄ |
| 5 | L | 5 | t |
| 4 | M | 4 | u |
| CHANNEL 52-LEVEL 1 | N | CHANNEL 57-LEVEL 1 | v̄ |
| 2 | P | 2 | w̄ |
| 3 | R | 3 | x̄ |
| 6 | S | 6 | y |
| 5 | T | 5 | z̄ |
| 4 | U | 4 | AA |
| CHANNEL 53-LEVEL 1 | V | CHANNEL 58-LEVEL 1 | BB |
| 2 | W | 2 | CC |
| 3 | X | 3 | DD |
| 6 | Y | 6 | EE |
| 5 | Z | 5 | FF |
| 4 | a | 4 | GG |
| CHANNEL 54-LEVEL 1 | b | CHANNEL 59-LEVEL 1 | HH |
| 2 | c̄ | 2 | JJ |
| 3 | d | 3 | KK |
| 6 | e | 6 | LL |
| 5 | f | 5 | MM |
| 4 | g | 4 | NN |
| | | SHIELD CONNECTION | PP |

11 J5

| INTERNAL CONNECTION | PIN | INTERNAL CONNECTION | PIN |
|---|---|---|---|
| CHANNEL 30-LEVEL 1 | A | CHANNEL 35-LEVEL 1 | h |
| 2 | B | 2 | i |
| 3 | C | 3 | j |
| 6 | D | 6 | k̄ |
| 5 | E | 5 | m |
| 4 | F | 4 | n |
| CHANNEL 31-LEVEL 1 | G | CHANNEL 36-LEVEL 1 | p̄ |
| 2 | H | 2 | q |
| 3 | J | 3 | r |
| 6 | K | 6 | s̄ |
| 5 | L | 5 | t |
| 4 | M | 4 | u |
| CHANNEL 32-LEVEL 1 | N | CHANNEL 37-LEVEL 1 | v̄ |
| 2 | P | 2 | w̄ |
| 3 | R | 3 | x̄ |
| 6 | S | 6 | y |
| 5 | T | 5 | z̄ |
| 4 | U | 4 | AA |
| CHANNEL 33-LEVEL 1 | V | CHANNEL 38-LEVEL 1 | BB |
| 2 | W | 2 | CC |
| 3 | X | 3 | DD |
| 6 | Y | 6 | EE |
| 5 | Z | 5 | FF |
| 4 | a | 4 | GG |
| CHANNEL 34-LEVEL 1 | b | CHANNEL 39-LEVEL 1 | HH |
| 2 | c̄ | 2 | JJ |
| 3 | d | 3 | KK |
| 6 | e | 6 | LL |
| 5 | f | 5 | MM |
| 4 | g | 4 | NN |
| | | SHIELD CONNECTION | PP |

12 J6

| INTERNAL CONNECTION | PIN | INTERNAL CONNECTION | PIN |
|---|---|---|---|
| CHANNEL 10-LEVEL 1 | A | CHANNEL 15-LEVEL 1 | h |
| 2 | B | 2 | i |
| 3 | C | 3 | j |
| 6 | D | 6 | k̄ |
| 5 | E | 5 | m |
| 4 | F | 4 | n |
| CHANNEL 11-LEVEL 1 | G | CHANNEL 16-LEVEL 1 | p̄ |
| 2 | H | 2 | q |
| 3 | J | 3 | r |
| 6 | K | 6 | s̄ |
| 5 | L | 5 | t |
| 4 | M | 4 | u |
| CHANNEL 12-LEVEL 1 | N | CHANNEL 17-LEVEL 1 | v̄ |
| 2 | P | 2 | w̄ |
| 3 | R | 3 | x̄ |
| 6 | S | 6 | y |
| 5 | T | 5 | z̄ |
| 4 | U | 4 | AA |
| CHANNEL 13-LEVEL 1 | V | CHANNEL 18-LEVEL 1 | BB |
| 2 | W | 2 | CC |
| 3 | X | 3 | DD |
| 6 | Y | 6 | EE |
| 5 | Z | 5 | FF |
| 4 | a | 4 | GG |
| CHANNEL 14-LEVEL 1 | b | CHANNEL 19-LEVEL 1 | HH |
| 2 | c̄ | 2 | JJ |
| 3 | d | 3 | KK |
| 6 | e | 6 | LL |
| 5 | f | 5 | MM |
| 4 | g | 4 | NN |
| | | SHIELD CONNECTION | PP |

13 J7

| INTERNAL CONNECTION | PIN | INTERNAL CONNECTION | PIN |
|---|---|---|---|
| CHANNEL 80-LEVEL 1 | A | CHANNEL 85-LEVEL 1 | h |
| 2 | B | 2 | i |
| 3 | C | 3 | j |
| 6 | D | 6 | k̄ |
| 5 | E | 5 | m |
| 4 | F | 4 | n |
| CHANNEL 81-LEVEL 1 | G | CHANNEL 86-LEVEL 1 | p̄ |
| 2 | H | 2 | q |
| 3 | J | 3 | r |
| 6 | K | 6 | s̄ |
| 5 | L | 5 | t |
| 4 | M | 4 | u |
| CHANNEL 82-LEVEL 1 | N | CHANNEL 87-LEVEL 1 | v̄ |
| 2 | P | 2 | w̄ |
| 3 | R | 3 | x̄ |
| 6 | S | 6 | y |
| 5 | T | 5 | z̄ |
| 4 | U | 4 | AA |
| CHANNEL 83-LEVEL 1 | V | CHANNEL 88-LEVEL 1 | BB |
| 2 | W | 2 | CC |
| 3 | X | 3 | DD |
| 6 | Y | 6 | EE |
| 5 | Z | 5 | FF |
| 4 | a | 4 | GG |
| CHANNEL 84-LEVEL 1 | b | CHANNEL 89-LEVEL 1 | HH |
| 2 | c̄ | 2 | JJ |
| 3 | d | 3 | KK |
| 6 | e | 6 | LL |
| 5 | f | 5 | MM |
| 4 | g | 4 | NN |
| | | SHIELD CONNECTION | PP |

14 J8

| INTERNAL CONNECTION | PIN | INTERNAL CONNECTION | PIN |
|---|---|---|---|
| CHANNEL 60-LEVEL 1 | A | CHANNEL 65-LEVEL 1 | h |
| 2 | B | 2 | i |
| 3 | C | 3 | j |
| 6 | D | 6 | k̄ |
| 5 | E | 5 | m |
| 4 | F | 4 | n |
| CHANNEL 61-LEVEL 1 | G | CHANNEL 66-LEVEL 1 | p̄ |
| 2 | H | 2 | q |
| 3 | J | 3 | r |
| 6 | K | 6 | s̄ |
| 5 | L | 5 | t |
| 4 | M | 4 | u |
| CHANNEL 62-LEVEL 1 | N | CHANNEL 67-LEVEL 1 | v̄ |
| 2 | P | 2 | w̄ |
| 3 | R | 3 | x̄ |
| 6 | S | 6 | y |
| 5 | T | 5 | z̄ |
| 4 | U | 4 | AA |
| CHANNEL 63-LEVEL 1 | V | CHANNEL 68-LEVEL 1 | BB |
| 2 | W | 2 | CC |
| 3 | X | 3 | DD |
| 6 | Y | 6 | EE |
| 5 | Z | 5 | FF |
| 4 | a | 4 | GG |
| CHANNEL 64-LEVEL 1 | b | CHANNEL 69-LEVEL 1 | HH |
| 2 | c̄ | 2 | JJ |
| 3 | d | 3 | KK |
| 6 | e | 6 | LL |
| 5 | f | 5 | MM |
| 4 | g | 4 | NN |
| | | SHIELD CONNECTION | PP |

REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
|---|---|---|---|---|---|
| A | | CHANGE IN ACCORDANCE WITH MXC-186484 | MXC-186484 | 23 MAY 63 | A.N. J.E.G. |
| A1 | | CHANGE IN ACCORDANCE WITH MXC 186874 PER TDRR 03718 | | 3 JUNE 63 | A.N. E.G. |
| E | | UPGRADED TO CLASS A PER TDRR 15777 | | 29 JAN 65 | J.W.P. CW |

| | |
|---|---|
| 1900048 | 1900004 |
| NEXT ASSY | USED ON |
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE WISCONSIN
ACSP PN
DRAWN E. LITZOW DATE 23 APRIL 63
CHECKED W. Diehl 30 APR 63
APPROVAL
APPROVAL 1 MAY 63
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

SWITCH, CROSSBAR

CODE IDENT NO
SIZE E
1900061
SCALE
SHEET 2 OF 3

1900061

15 J9

| INTERNAL CONNECTION | | | PIN | INTERNAL CONNECTION | | | PIN |
|---|---|---|---|---|---|---|---|
| CHANNEL | 40-LEVEL | 1 | A | CHANNEL | 45-LEVEL | 1 | h |
| | | 2 | B | | | 2 | i |
| | | 3 | C | | | 3 | j |
| | | 6 | D | | | 6 | k̄ |
| | | 5 | E | | | 5 | m |
| | | 4 | F | | | 4 | n |
| CHANNEL | 41-LEVEL | 1 | G | CHANNEL | 46-LEVEL | 1 | p̄ |
| | | 2 | H | | | 2 | q |
| | | 3 | J | | | 3 | r |
| | | 6 | K | | | 6 | s̄ |
| | | 5 | L | | | 5 | t |
| | | 4 | M | | | 4 | u |
| CHANNEL | 42-LEVEL | 1 | N | CHANNEL | 47-LEVEL | 1 | v̄ |
| | | 2 | P | | | 2 | w̄ |
| | | 3 | R | | | 3 | x̄ |
| | | 6 | S | | | 6 | y |
| | | 5 | T | | | 5 | z̄ |
| | | 4 | U | | | 4 | AA |
| CHANNEL | 43-LEVEL | 1 | V | CHANNEL | 48-LEVEL | 1 | BB |
| | | 2 | W | | | 2 | CC |
| | | 3 | X | | | 3 | DD |
| | | 6 | Y | | | 6 | EE |
| | | 5 | Z | | | 5 | FF |
| | | 4 | a | | | 4 | GG |
| CHANNEL | 44-LEVEL | 1 | b | CHANNEL | 49-LEVEL | 1 | HH |
| | | 2 | c̄ | | | 2 | JJ |
| | | 3 | d | | | 3 | KK |
| | | 6 | e | | | 6 | LL |
| | | 5 | f | | | 5 | MM |
| | | 4 | g | | | 4 | NN |
| | | | | SHIELD CONNECTION | | | PP |

16 J10

| INTERNAL CONNECTION | | | PIN | INTERNAL CONNECTION | | | PIN |
|---|---|---|---|---|---|---|---|
| CHANNEL | 20-LEVEL | 1 | A | CHANNEL | 25-LEVEL | 1 | h |
| | | 2 | B | | | 2 | i |
| | | 3 | C | | | 3 | j |
| | | 6 | D | | | 6 | k̄ |
| | | 5 | E | | | 5 | m |
| | | 4 | F | | | 4 | n |
| CHANNEL | 21-LEVEL | 1 | G | CHANNEL | 26-LEVEL | 1 | p̄ |
| | | 2 | H | | | 2 | q |
| | | 3 | J | | | 3 | r |
| | | 6 | K | | | 6 | s̄ |
| | | 5 | L | | | 5 | t |
| | | 4 | M | | | 4 | u |
| CHANNEL | 22-LEVEL | 1 | N | CHANNEL | 27-LEVEL | 1 | v̄ |
| | | 2 | P | | | 2 | w̄ |
| | | 3 | R | | | 3 | x̄ |
| | | 6 | S | | | 6 | y |
| | | 5 | T | | | 5 | z̄ |
| | | 4 | U | | | 4 | AA |
| CHANNEL | 23-LEVEL | 1 | V | CHANNEL | 28-LEVEL | 1 | BB |
| | | 2 | W | | | 2 | CC |
| | | 3 | X | | | 3 | DD |
| | | 6 | Y | | | 6 | EE |
| | | 5 | Z | | | 5 | FF |
| | | 4 | a | | | 4 | GG |
| CHANNEL | 24-LEVEL | 1 | b | CHANNEL | 29-LEVEL | 1 | HH |
| | | 2 | c̄ | | | 2 | JJ |
| | | 3 | d | | | 3 | KK |
| | | 6 | e | | | 6 | LL |
| | | 5 | f | | | 5 | MM |
| | | 4 | g | | | 4 | NN |
| | | | | SHIELD CONNECTION | | | PP |

17 J11

| INTERNAL CONNECTION | | | PIN | INTERNAL CONNECTION | | | PIN |
|---|---|---|---|---|---|---|---|
| CHANNEL | 00-LEVEL | 1 | A | CHANNEL | 05-LEVEL | 1 | h |
| | | 2 | B | | | 2 | i |
| | | 3 | C | | | 3 | j |
| | | 6 | D | | | 6 | k̄ |
| | | 5 | E | | | 5 | m |
| | | 4 | F | | | 4 | n |
| CHANNEL | 01-LEVEL | 1 | G | CHANNEL | 06-LEVEL | 1 | p̄ |
| | | 2 | H | | | 2 | q |
| | | 3 | J | | | 3 | r |
| | | 6 | K | | | 6 | s̄ |
| | | 5 | L | | | 5 | t |
| | | 4 | M | | | 4 | u |
| CHANNEL | 02-LEVEL | 1 | N | CHANNEL | 07-LEVEL | 1 | v̄ |
| | | 2 | P | | | 2 | w̄ |
| | | 3 | R | | | 3 | x̄ |
| | | 6 | S | | | 6 | y |
| | | 5 | T | | | 5 | z̄ |
| | | 4 | U | | | 4 | AA |
| CHANNEL | 03-LEVEL | 1 | V | CHANNEL | 08-LEVEL | 1 | BB |
| | | 2 | W | | | 2 | CC |
| | | 3 | X | | | 3 | DD |
| | | 6 | Y | | | 6 | EE |
| | | 5 | Z | | | 5 | FF |
| | | 4 | a | | | 4 | GG |
| CHANNEL | 04-LEVEL | 1 | b | CHANNEL | 09-LEVEL | 1 | HH |
| | | 2 | c̄ | | | 2 | JJ |
| | | 3 | d | | | 3 | KK |
| | | 6 | e | | | 6 | LL |
| | | 5 | f | | | 5 | MM |
| | | 4 | g | | | 4 | NN |
| | | | | SHIELD CONNECTION | | | PP |

(M)

REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
|---|---|---|---|---|---|
| A | | CHANGE IN ACCORDANCE WITH MXC-186484 | MXC-186484 | 29 MAY 63 | A.N. J.E.G. |
| A1 | | CHANGE IN ACCORDANCE WITH MXC 186874 PER TDRR 03718 | | 3 JUNE 63 | |
| E | | UPGRADED TO CLASS A PER TDRR 15777 | | 29 JAN 65 | WWP CW |

| | |
|---|---|
| 1900048 | 1900C04 |
| NEXT ASSY | USED ON |
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON:
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE WISCONSIN
ACSP PN
DRAWN E. LITZOW DATE 23 APRIL 63
CHECKED [illegible] 30 APR 63
APPROVAL [illegible]
APPROVAL [illegible] MAY 63
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

SWITCH, CROSSBAR

CODE IDENT NO
SIZE E
1900061
SCALE —
SHEET 3 OF 3

1900061

REQUIREMENTS:

INTERPRET DWG. IN ACCORDANCE WITH MIL-D-70327.

UNIT SHALL BE A 10X10X6 TYPE F BASIC CROSSBAR SWITCH MOUNTED IN AN ENCLOSURE PER THIS DRAWING ALL CONTROL AND SIGNAL LINES ARE TO BE WIRED TO EXTERNAL CONNECTORS.

CONNECTORS: VENDOR SHALL SUPPLY AND WIRE UNIT WITH CONNECTORS AS LISTED IN THE PIN LIST. CONNECTOR LOCATION IS AS SHOWN ON THE FRONT VIEW TWISTED SHIELDED WIRE PAIRS SHALL BE USED TO WIRE THE INPUT AND OUTPUT SIGNAL LEVELS. THE SIGNAL LEVELS ARE 1 & 2 AND 3 & 6.

TWO COPIES OF SERVICE MANUALS CONTAINING A SPARE PARTS LIST, OPERATING INSTRUCTIONS, & MAINTENANCE INSTRUCTIONS SHALL BE SUPPLIED WITH EACH UNIT. A COPY OF ALL INSPECTION TEST DATA SHALL BE SUPPLIED WITH EACH UNIT.

ISOLATION: POWER INPUT SHALL BE ELECTRICALLY ISOLATED FROM THE CHASSIS. RESISTANCE BETWEEN CROSSBAR SWITCH CONDUCTORS AND FRAME OR BETWEEN CROSSBAR SWITCH CONDUCTORS SHALL BE 100 MEGOHMS MINIMUM AT 500 VDC.

EQUIPMENT SHALL BE FREE OF BURRS AND SHARP EDGES ON THE EXTERNAL SURFACE.

THE SUPPLIER'S NAME, ADDRESS, AND PART NUMBER MUST BE PLACED ON THE OUTSIDE SURFACE OF THE REAR PLATE PER ND-1002122. THIS INFORMATION IS NOT TO APPEAR ON THE FRONT PANEL.

ALL ACTUATOR AND RELAY COILS SHALL BE EQUIPPED WITH DIODE SURGE SUPPRESSORS NASA NO. 1896966-290.

WIRE: USE POLYVINYL OR TEFLON INSULATED WIRE, NO SMALLER THAN 24 AWG.

POWER: THE UNIT SHALL BE OPERABLE OVER A RANGE OF INPUT VOLTAGE OF 22 TO 30 VOLTS DC. AC SPARK PLUG WILL SUPPLY 27 VDC NOMINAL VOLTAGE TO THE UNIT.

FUSE: THE 27 VDC LO LINE SHALL BE FUSED WITH A 1/4 AMP. FUSE. THE FUSE SHALL APPEAR ON THE FRONT PANEL, WITH THE LOCATION BEING OPTIONAL.

BLOCKING DIODE: A BLOCKING DIODE NASA NO. 1896966-012 SHALL BE INSERTED IN THE 27 VDC LO LINE TO PREVENT REVERSE VOLTAGE FROM BEING APPLIED ACROSS THE SUPPRESSION DIODES, WHICH ARE BEING PLACED ACROSS ALL COILS.

THE EQUIPMENT SHALL PASS ALL TESTS CALLED OUT IN ATP-1900061.

1. SIDES OF CHASSIS LOCATED BY 17 INCH DIMENSION MUST BE PARALLEL WITHIN 0.031 AND PERPENDICULAR TO THE FRONT PANEL WITHIN 0.062.

2. FINISH: ALODINE PER MIL-C-5541 ALL EXTERIOR SURFACES. (ES-591)

3. CHARACTERS PER ND-1002122 CHARACTER HEIGHT 1/8 INCH UNLESS OTHERWISE SPECIFIED. SILK SCREEN, USING SEMI-GLOSS ENAMEL, INSTRUMENT BLACK, CENTRALIZE AS SHOWN APPLY PER ND1002019.

4. THERE SHALL BE NO PROTRUSIONS OUTSIDE OF THE CHASSIS IN THIS AREA.

5. MARKING OF REFERENCE DESIGNATION CHARACTERS OF DIMENSIONS SHOWN TO BE APPLIED PER ND 1002019.

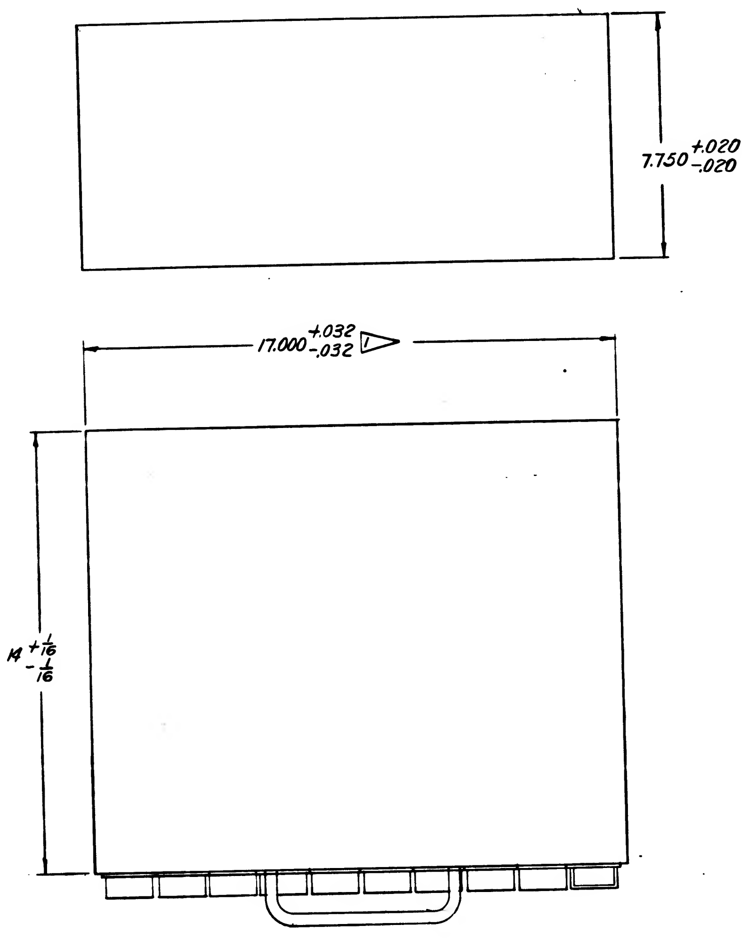
6. FRONT PANEL MATERIAL, 3/16 ALUMINUM QQ-A-318, TEMPER H-32 5052-H32 (ES-2105).

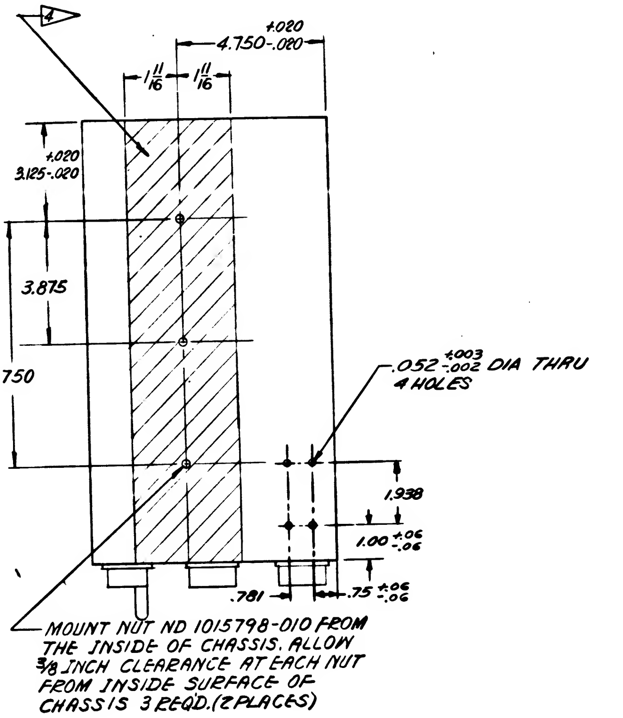
DRAWINGS FOR REF.
SCHEMATIC DIAGRAM ELECTRICAL 1900078

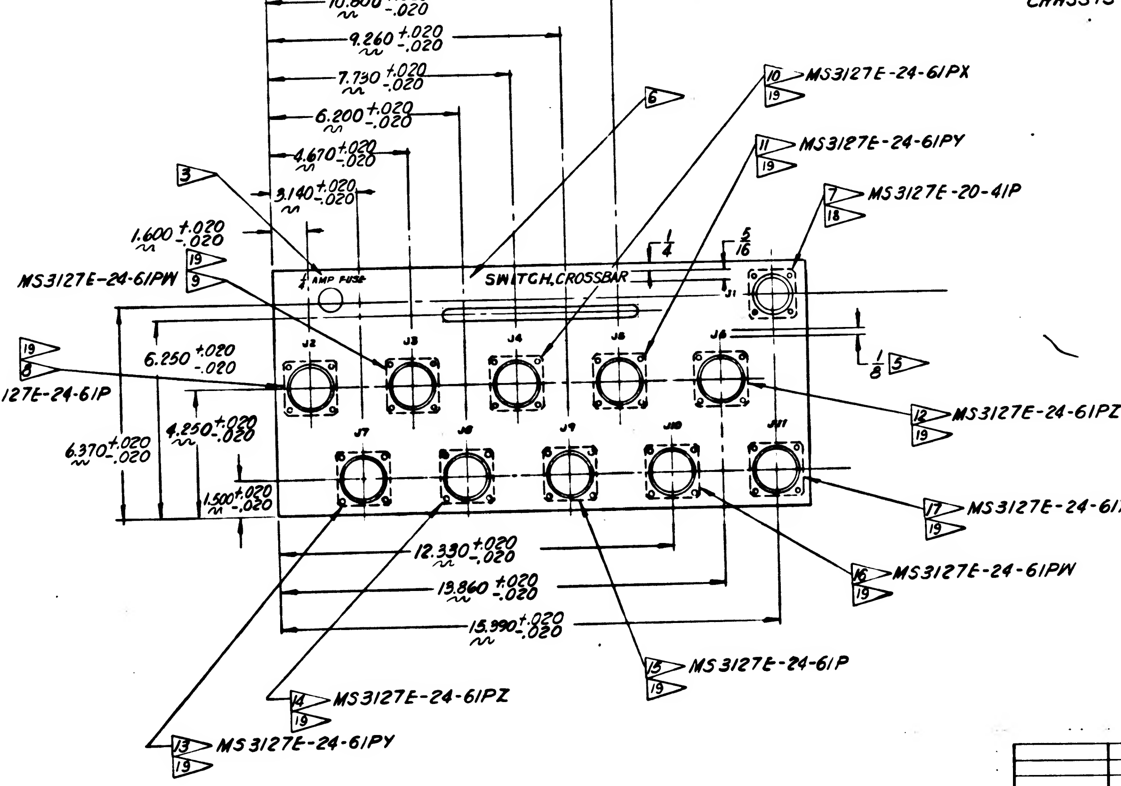
18. MINIMUM MOUNTING HOLE SIZE SHALL BE 1.531 INCHES.

19. MINIMUM MOUNTING HOLE SIZE SHALL BE 1.777 INCHES.

ORIGINAL SOURCE OF SUPPLY:
JAMES CUNNINGHAM SON & CO. INC.
HONEOYE FALLS, N.Y.




4
4.750 +.020 -.020
1 11/16
1 11/16
3.125 +.020 -.020
3.875
7.750
.052 +.003 -.002 DIA THRU 4 HOLES
1.938
1.00 +.06 -.06
.781
.75 +.06 -.06
MOUNT NUT ND 1015798-010 FROM THE INSIDE OF CHASSIS. ALLOW 3/8 INCH CLEARANCE AT EACH NUT FROM INSIDE SURFACE OF CHASSIS 3 REQD. (2 PLACES)



REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
|---|---|---|---|---|---|
| A |  | (I) CHANGE IN ACCORDANCE WITH MXC-186484 | MXC-186484 | 23 MAY 63 | A.N. J.E.G. |
| A1 | F-8<br>C-8<br>C-5 | 1. ADDED "PER ND-1002122" 2. "CHARACTERS PER ND-1002122" WAS "CHARACTERS (FUTURE DEMIBOLD)." 3 "SWITCH, CROSSBAR" WAS "SWITCH, BOX". 4. TITLE WAS "SWITCH, BOX." | MXC 186874 | 3 JUNE 63 | J.E.G. |
| B |  | CHANGE IN ACCORDANCE WITH MXC 187472 |  | 25 JUN 63 | [illegible] |
| C |  | CHANGE IN ACCORDANCE WITH MXC187928 PER TDRR 0378 |  | 5 JULY 63 | [illegible] |
| D | E-2 | ADDED (4) .052 HOLES & ASSOC DIM PER MXC 192075 PER TDRR 28199 |  | 11 18 63 | R.D. |
| E | F-8 | UPGRADED TO CLASS A & REVISED PER TDRR 15777 |  | 29 JAN 65 | JWP |
| F |  | REPLACED WITH CHANGE BY REV G REVISED PER TDRR 15778 |  | 2 FEB 65 | JWD |

| SHEET 1 | SHEET 2 | SHEET 3 |
|---|---|---|
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
| F | F | F |
| E | E | E |
| D | A1 | A1 |
| C | A1 | A1 |

REVISION STATUS OF SHEETS

REPLACED WITH CHANGE BY REV G

| QUANTITY REQUIRED |  |  | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900048 | 1900004 |  |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS +1/64 -1/64 DECIMALS +.005 -.005 ANGLES +2° -2°
DO NOT SCALE THIS DRAWING
MATERIAL 6
CONTRACT NAS9-497

AC SPARK PLUG DIVISION. GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN E. LITZOW DATE 23 APRIL 63
CHECKED Suhl 30 APR 63
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON TEXAS

SWITCH, CROSSBAR

CODE IDENT NO
SIZE E
1900061
SCALE 1/2
SHEET 1 OF 3

7 J1

| INTERNAL CONNECTION | PIN | INTERNAL CONNECTION | PIN |
|---|---|---|---|
| CHASSIS GROUND | A | COIL H0-a | a |
| CONTACT S0-3 | B | COIL H1-a | b |
| CONTACT S0-2 | C | BLANK | $\bar{c}$ |
| BLANK | D | LEVEL 4 OUTPUT | d |
| COIL S0-a | E | LEVEL 5 OUTPUT | e |
| S1 | F | BLANK | f |
| S2 | G | COIL H2-a | g |
| BLANK | H | H3- | h |
| LEVEL 1 OUTPUT } USE TWISTED | J | H4- | i |
| LEVEL 2 OUTPUT } SHIELDED PAIR | K | H5- | j |
| LEVEL 3 OUTPUT } USE TWISTED | L | H6- | $\bar{k}$ |
| LEVEL 6 OUTPUT } SHIELDED PAIR | M | H7- | m |
| BLANK | N | H8- | n |
| COIL S3-a | P | BLANK | $\bar{p}$ |
| S4- | R | BLANK | q |
| S5- | S | COIL H9-a | r |
| S6- | T | FUSE F1-1 | $\bar{s}$ |
| S7- | U | SHIELD CONNECTION | t |
| S8- | V | | |
| S9- | W | | |
| BLANK | X | | |
| CONTACT H0-3 | Y | | |
| CONTACT H0-2 | Z | | |

8 J2

| INTERNAL CONNECTION | PIN | INTERNAL CONNECTION | PIN |
|---|---|---|---|
| CHANNEL 90-LEVEL 1 | A | CHANNEL 95-LEVEL 1 | h |
| 2 | B | 2 | i |
| 3 | C | 3 | j |
| 6 | D | 6 | $\bar{k}$ |
| 5 | E | 5 | m |
| 4 | F | 4 | n |
| CHANNEL 91-LEVEL 1 | G | CHANNEL 96-LEVEL 1 | $\bar{p}$ |
| 2 | H | 2 | q |
| 3 | J | 3 | r |
| 6 | K | 6 | $\bar{s}$ |
| 5 | L | 5 | t |
| 4 | M | 4 | u |
| CHANNEL 92-LEVEL 1 | N | CHANNEL 97-LEVEL 1 | $\bar{v}$ |
| 2 | P | 2 | $\bar{w}$ |
| 3 | R | 3 | $\bar{x}$ |
| 6 | S | 6 | y |
| 5 | T | 5 | $\bar{z}$ |
| 4 | U | 4 | AA |
| CHANNEL 93-LEVEL 1 | V | CHANNEL 98-LEVEL 1 | BB |
| 2 | W | 2 | CC |
| 3 | X | 3 | DD |
| 6 | Y | 6 | EE |
| 5 | Z | 5 | FF |
| 4 | a | 4 | GG |
| CHANNEL 94-LEVEL 1 | b | CHANNEL 99-LEVEL 1 | HH |
| 2 | $\bar{c}$ | 2 | JJ |
| 3 | d | 3 | KK |
| 6 | e | 6 | LL |
| 5 | f | 5 | MM |
| 4 | g | 4 | NN |
| | | SHIELD CONNECTION | PP |

9 J3

| INTERNAL CONNECTION | PIN | INTERNAL CONNECTION | PIN |
|---|---|---|---|
| CHANNEL 70-LEVEL 1 | A | CHANNEL 75-LEVEL 1 | h |
| 2 | B | 2 | i |
| 3 | C | 3 | j |
| 6 | D | 6 | $\bar{k}$ |
| 5 | E | 5 | m |
| 4 | F | 4 | n |
| CHANNEL 71-LEVEL 1 | G | CHANNEL 76-LEVEL 1 | $\bar{p}$ |
| 2 | H | 2 | q |
| 3 | J | 3 | r |
| 6 | K | 6 | $\bar{s}$ |
| 5 | L | 5 | t |
| 4 | M | 4 | u |
| CHANNEL 72-LEVEL 1 | N | CHANNEL 77-LEVEL 1 | $\bar{v}$ |
| 2 | P | 2 | $\bar{w}$ |
| 3 | R | 3 | $\bar{x}$ |
| 6 | S | 6 | y |
| 5 | T | 5 | $\bar{z}$ |
| 4 | U | 4 | AA |
| CHANNEL 73-LEVEL 1 | V | CHANNEL 78-LEVEL 1 | BB |
| 2 | W | 2 | CC |
| 3 | X | 3 | DD |
| 6 | Y | 6 | EE |
| 5 | Z | 5 | FF |
| 4 | a | 4 | GG |
| CHANNEL 74-LEVEL 1 | b | CHANNEL 79-LEVEL 1 | HH |
| 2 | $\bar{c}$ | 2 | JJ |
| 3 | d | 3 | KK |
| 6 | e | 6 | LL |
| 5 | f | 5 | MM |
| 4 | g | 4 | NN |
| | | SHIELD CONNECTION | PP |

10 J4

| INTERNAL CONNECTION | PIN | INTERNAL CONNECTION | PIN |
|---|---|---|---|
| CHANNEL 50-LEVEL 1 | A | CHANNEL 55-LEVEL 1 | h |
| 2 | B | 2 | i |
| 3 | C | 3 | j |
| 6 | D | 6 | $\bar{k}$ |
| 5 | E | 5 | m |
| 4 | F | 4 | n |
| CHANNEL 51-LEVEL 1 | G | CHANNEL 56-LEVEL 1 | $\bar{p}$ |
| 2 | H | 2 | q |
| 3 | J | 3 | r |
| 6 | K | 6 | $\bar{s}$ |
| 5 | L | 5 | t |
| 4 | M | 4 | u |
| CHANNEL 52-LEVEL 1 | N | CHANNEL 57-LEVEL 1 | $\bar{v}$ |
| 2 | P | 2 | $\bar{w}$ |
| 3 | R | 3 | $\bar{x}$ |
| 6 | S | 6 | y |
| 5 | T | 5 | $\bar{z}$ |
| 4 | U | 4 | AA |
| CHANNEL 53-LEVEL 1 | V | CHANNEL 58-LEVEL 1 | BB |
| 2 | W | 2 | CC |
| 3 | X | 3 | DD |
| 6 | Y | 6 | EE |
| 5 | Z | 5 | FF |
| 4 | a | 4 | GG |
| CHANNEL 54-LEVEL 1 | b | CHANNEL 59-LEVEL 1 | HH |
| 2 | $\bar{c}$ | 2 | JJ |
| 3 | d | 3 | KK |
| 6 | e | 6 | LL |
| 5 | f | 5 | MM |
| 4 | g | 4 | NN |
| | | SHIELD CONNECTION | PP |

11 J5

| INTERNAL CONNECTION | PIN | INTERNAL CONNECTION | PIN |
|---|---|---|---|
| CHANNEL 30-LEVEL 1 | A | CHANNEL 35-LEVEL 1 | h |
| 2 | B | 2 | i |
| 3 | C | 3 | j |
| 6 | D | 6 | $\bar{k}$ |
| 5 | E | 5 | m |
| 4 | F | 4 | n |
| CHANNEL 31-LEVEL 1 | G | CHANNEL 36-LEVEL 1 | $\bar{p}$ |
| 2 | H | 2 | q |
| 3 | J | 3 | r |
| 6 | K | 6 | $\bar{s}$ |
| 5 | L | 5 | t |
| 4 | M | 4 | u |
| CHANNEL 32-LEVEL 1 | N | CHANNEL 37-LEVEL 1 | $\bar{v}$ |
| 2 | P | 2 | $\bar{w}$ |
| 3 | R | 3 | $\bar{x}$ |
| 6 | S | 6 | y |
| 5 | T | 5 | $\bar{z}$ |
| 4 | U | 4 | AA |
| CHANNEL 33-LEVEL 1 | V | CHANNEL 38-LEVEL 1 | BB |
| 2 | W | 2 | CC |
| 3 | X | 3 | DD |
| 6 | Y | 6 | EE |
| 5 | Z | 5 | FF |
| 4 | a | 4 | GG |
| CHANNEL 34-LEVEL 1 | b | CHANNEL 39-LEVEL 1 | HH |
| 2 | $\bar{c}$ | 2 | JJ |
| 3 | d | 3 | KK |
| 6 | e | 6 | LL |
| 5 | f | 5 | MM |
| 4 | g | 4 | NN |
| | | SHIELD CONNECTION | PP |

12 J6

| INTERNAL CONNECTION | PIN | INTERNAL CONNECTION | PIN |
|---|---|---|---|
| CHANNEL 10-LEVEL 1 | A | CHANNEL 15-LEVEL 1 | h |
| 2 | B | 2 | i |
| 3 | C | 3 | j |
| 6 | D | 6 | $\bar{k}$ |
| 5 | E | 5 | m |
| 4 | F | 4 | n |
| CHANNEL 11-LEVEL 1 | G | CHANNEL 16-LEVEL 1 | $\bar{p}$ |
| 2 | H | 2 | q |
| 3 | J | 3 | r |
| 6 | K | 6 | $\bar{s}$ |
| 5 | L | 5 | t |
| 4 | M | 4 | u |
| CHANNEL 12-LEVEL 1 | N | CHANNEL 17-LEVEL 1 | $\bar{v}$ |
| 2 | P | 2 | $\bar{w}$ |
| 3 | R | 3 | $\bar{x}$ |
| 6 | S | 6 | y |
| 5 | T | 5 | $\bar{z}$ |
| 4 | U | 4 | AA |
| CHANNEL 13-LEVEL 1 | V | CHANNEL 18-LEVEL 1 | BB |
| 2 | W | 2 | CC |
| 3 | X | 3 | DD |
| 6 | Y | 6 | EE |
| 5 | Z | 5 | FF |
| 4 | a | 4 | GG |
| CHANNEL 14-LEVEL 1 | b | CHANNEL 19-LEVEL 1 | HH |
| 2 | $\bar{c}$ | 2 | JJ |
| 3 | d | 3 | KK |
| 6 | e | 6 | LL |
| 5 | f | 5 | MM |
| 4 | g | 4 | NN |
| | | SHIELD CONNECTION | PP |

13 J7

| INTERNAL CONNECTION | PIN | INTERNAL CONNECTION | PIN |
|---|---|---|---|
| CHANNEL 80-LEVEL 1 | A | CHANNEL 85-LEVEL 1 | h |
| 2 | B | 2 | i |
| 3 | C | 3 | j |
| 6 | D | 6 | $\bar{k}$ |
| 5 | E | 5 | m |
| 4 | F | 4 | n |
| CHANNEL 81-LEVEL 1 | G | CHANNEL 86-LEVEL 1 | $\bar{p}$ |
| 2 | H | 2 | q |
| 3 | J | 3 | r |
| 6 | K | 6 | $\bar{s}$ |
| 5 | L | 5 | t |
| 4 | M | 4 | u |
| CHANNEL 82-LEVEL 1 | N | CHANNEL 87-LEVEL 1 | $\bar{v}$ |
| 2 | P | 2 | $\bar{w}$ |
| 3 | R | 3 | $\bar{x}$ |
| 6 | S | 6 | y |
| 5 | T | 5 | $\bar{z}$ |
| 4 | U | 4 | AA |
| CHANNEL 83-LEVEL 1 | V | CHANNEL 88-LEVEL 1 | BB |
| 2 | W | 2 | CC |
| 3 | X | 3 | DD |
| 6 | Y | 6 | EE |
| 5 | Z | 5 | FF |
| 4 | a | 4 | GG |
| CHANNEL 84-LEVEL 1 | b | CHANNEL 89-LEVEL 1 | HH |
| 2 | $\bar{c}$ | 2 | JJ |
| 3 | d | 3 | KK |
| 6 | e | 6 | LL |
| 5 | f | 5 | MM |
| 4 | g | 4 | NN |
| | | SHIELD CONNECTION | PP |

14 J8

| INTERNAL CONNECTION | PIN | INTERNAL CONNECTION | PIN |
|---|---|---|---|
| CHANNEL 60-LEVEL 1 | A | CHANNEL 65-LEVEL 1 | h |
| 2 | B | 2 | i |
| 3 | C | 3 | j |
| 6 | D | 6 | $\bar{k}$ |
| 5 | E | 5 | m |
| 4 | F | 4 | n |
| CHANNEL 61-LEVEL 1 | G | CHANNEL 66-LEVEL 1 | $\bar{p}$ |
| 2 | H | 2 | q |
| 3 | J | 3 | r |
| 6 | K | 6 | $\bar{s}$ |
| 5 | L | 5 | t |
| 4 | M | 4 | u |
| CHANNEL 62-LEVEL 1 | N | CHANNEL 67-LEVEL 1 | $\bar{v}$ |
| 2 | P | 2 | $\bar{w}$ |
| 3 | R | 3 | $\bar{x}$ |
| 6 | S | 6 | y |
| 5 | T | 5 | $\bar{z}$ |
| 4 | U | 4 | AA |
| CHANNEL 63-LEVEL 1 | V | CHANNEL 68-LEVEL 1 | BB |
| 2 | W | 2 | CC |
| 3 | X | 3 | DD |
| 6 | Y | 6 | EE |
| 5 | Z | 5 | FF |
| 4 | a | 4 | GG |
| CHANNEL 64-LEVEL 1 | b | CHANNEL 69-LEVEL 1 | HH |
| 2 | $\bar{c}$ | 2 | JJ |
| 3 | d | 3 | KK |
| 6 | e | 6 | LL |
| 5 | f | 5 | MM |
| 4 | g | 4 | NN |
| | | SHIELD CONNECTION | PP |

REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
|---|---|---|---|---|---|
| A | | CHANGE IN ACCORDANCE WITH MXC-186484 | MXC-186484 | 29 MAY 63 | J.E.G. |
| A1 | | CHANGE IN ACCORDANCE WITH MXC 186874 PER TDRR 03 [illegible] | | 3 JUNE 63 | |
| E | | UPGRADED TO CLASS A PER TDRR 15777 | | 29 JAN 65 | JWP |
| F | | REPLACED WITH CHANGE BY REV. G<br>REVISED PER TDRR 15778 | | 2 FEB 65 | JWP |

REPLACED WITH CHANGE BY REV G

| NEXT ASSY | USED ON |
|---|---|
| 1900048 | 1900004 |

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN E. LITZOW DATE 23 APRIL 63
CHECKED W. Diehl 30 APR 63
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON TEXAS

SWITCH, CROSSBAR

CODE IDENT NO
SIZE E
1900061
SCALE
SHEET 2 OF 3

1900061

## REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
|---|---|---|---|---|---|
| A | | CHANGE IN ACCORDANCE WITH MXC-186484 | MXC-186484 | 23 MAY 63 | A. V.<br>J. E. G. |
| A1 | | CHANGE IN ACCORDANCE WITH MXC 180674 PER TDRR 03-P | | 3 JUNE 63 | |
| E | | UPGRADED TO CLASS A PER TDRR 15777 | | 29 JAN 65 | |
| F | | REPLACED WITH CHANGE BY REV G<br>REVISED PER TDRR 5778 | | 2 FEB 65 | |

15 J9

| INTERNAL CONNECTION | | | PIN | INTERNAL CONNECTION | | | PIN |
|---|---|---|---|---|---|---|---|
| CHANNEL | 40-LEVEL | 1 | A | CHANNEL | 45-LEVEL | 1 | h |
| | | 2 | B | | | 2 | i |
| | | 3 | C | | | 3 | j |
| | | 6 | D | | | 6 | k̄ |
| | | 5 | E | | | 5 | m |
| | | 4 | F | | | 4 | n |
| CHANNEL | 41-LEVEL | 1 | G | CHANNEL | 46-LEVEL | 1 | p̄ |
| | | 2 | H | | | 2 | q |
| | | 3 | J | | | 3 | r |
| | | 6 | K | | | 6 | s̄ |
| | | 5 | L | | | 5 | t |
| | | 4 | M | | | 4 | u |
| CHANNEL | 42-LEVEL | 1 | N | CHANNEL | 47-LEVEL | 1 | v̄ |
| | | 2 | P | | | 2 | w̄ |
| | | 3 | R | | | 3 | x̄ |
| | | 6 | S | | | 6 | y |
| | | 5 | T | | | 5 | z̄ |
| | | 4 | U | | | 4 | AA |
| CHANNEL | 43-LEVEL | 1 | V | CHANNEL | 48-LEVEL | 1 | BB |
| | | 2 | W | | | 2 | CC |
| | | 3 | X | | | 3 | DD |
| | | 6 | Y | | | 6 | EE |
| | | 5 | Z | | | 5 | FF |
| | | 4 | a | | | 4 | GG |
| CHANNEL | 44-LEVEL | 1 | b | CHANNEL | 49-LEVEL | 1 | HH |
| | | 2 | c̄ | | | 2 | JJ |
| | | 3 | d | | | 3 | KK |
| | | 6 | e | | | 6 | LL |
| | | 5 | f | | | 5 | MM |
| | | 4 | g | | | 4 | NN |
| | | | | SHIELD CONNECTION | | | PP |

16 J10

| INTERNAL CONNECTION | | | PIN | INTERNAL CONNECTION | | | PIN |
|---|---|---|---|---|---|---|---|
| CHANNEL | 20-LEVEL | 1 | A | CHANNEL | 25-LEVEL | 1 | h |
| | | 2 | B | | | 2 | i |
| | | 3 | C | | | 3 | j |
| | | 6 | D | | | 6 | k̄ |
| | | 5 | E | | | 5 | m |
| | | 4 | F | | | 4 | n |
| CHANNEL | 21-LEVEL | 1 | G | CHANNEL | 26-LEVEL | 1 | p̄ |
| | | 2 | H | | | 2 | q |
| | | 3 | J | | | 3 | r |
| | | 6 | K | | | 6 | s̄ |
| | | 5 | L | | | 5 | t |
| | | 4 | M | | | 4 | u |
| CHANNEL | 22-LEVEL | 1 | N | CHANNEL | 27-LEVEL | 1 | v̄ |
| | | 2 | P | | | 2 | w̄ |
| | | 3 | R | | | 3 | x̄ |
| | | 6 | S | | | 6 | y |
| | | 5 | T | | | 5 | z̄ |
| | | 4 | U | | | 4 | AA |
| CHANNEL | 23-LEVEL | 1 | V | CHANNEL | 28-LEVEL | 1 | BB |
| | | 2 | W | | | 2 | CC |
| | | 3 | X | | | 3 | DD |
| | | 6 | Y | | | 6 | EE |
| | | 5 | Z | | | 5 | FF |
| | | 4 | a | | | 4 | GG |
| CHANNEL | 24-LEVEL | 1 | b | CHANNEL | 29-LEVEL | 1 | HH |
| | | 2 | c̄ | | | 2 | JJ |
| | | 3 | d | | | 3 | KK |
| | | 6 | e | | | 6 | LL |
| | | 5 | f | | | 5 | MM |
| | | 4 | g | | | 4 | NN |
| | | | | SHIELD CONNECTION | | | PP |

17 J11

| INTERNAL CONNECTION | | | PIN | INTERNAL CONNECTION | | | PIN |
|---|---|---|---|---|---|---|---|
| CHANNEL | 00-LEVEL | 1 | A | CHANNEL | 05-LEVEL | 1 | h |
| | | 2 | B | | | 2 | i |
| | | 3 | C | | | 3 | j |
| | | 6 | D | | | 6 | k̄ |
| | | 5 | E | | | 5 | m |
| | | 4 | F | | | 4 | n |
| CHANNEL | 01-LEVEL | 1 | G | CHANNEL | 06-LEVEL | 1 | p̄ |
| | | 2 | H | | | 2 | q |
| | | 3 | J | | | 3 | r |
| | | 6 | K | | | 6 | s̄ |
| | | 5 | L | | | 5 | t |
| | | 4 | M | | | 4 | u |
| CHANNEL | 02-LEVEL | 1 | N | CHANNEL | 07-LEVEL | 1 | v̄ |
| | | 2 | P | | | 2 | w̄ |
| | | 3 | R | | | 3 | x̄ |
| | | 6 | S | | | 6 | y |
| | | 5 | T | | | 5 | z̄ |
| | | 4 | U | | | 4 | AA |
| CHANNEL | 03-LEVEL | 1 | V | CHANNEL | 08-LEVEL | 1 | BB |
| | | 2 | W | | | 2 | CC |
| | | 3 | X | | | 3 | DD |
| | | 6 | Y | | | 6 | EE |
| | | 5 | Z | | | 5 | FF |
| | | 4 | a | | | 4 | GG |
| CHANNEL | 04-LEVEL | 1 | b | CHANNEL | 09-LEVEL | 1 | HH |
| | | 2 | c̄ | | | 2 | JJ |
| | | 3 | d | | | 3 | KK |
| | | 6 | e | | | 6 | LL |
| | | 5 | f | | | 5 | MM |
| | | 4 | g | | | 4 | NN |
| | | | | SHIELD CONNECTION | | | PP |

**REPLACED WITH CHANGE BY REV G**

| NEXT ASSY | USED ON |
|---|---|
| 1900048 | 1900004 |

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL ———
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN E. LITZOW DATE 23 APRIL 63
CHECKED W. Diehl 30 APR 63
APPROVAL
APPROVAL 1 MAY 63
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

SWITCH CROSSBAR

CODE IDENT NO
SIZE E
1900061
SCALE ———
SHEET 3 OF 3

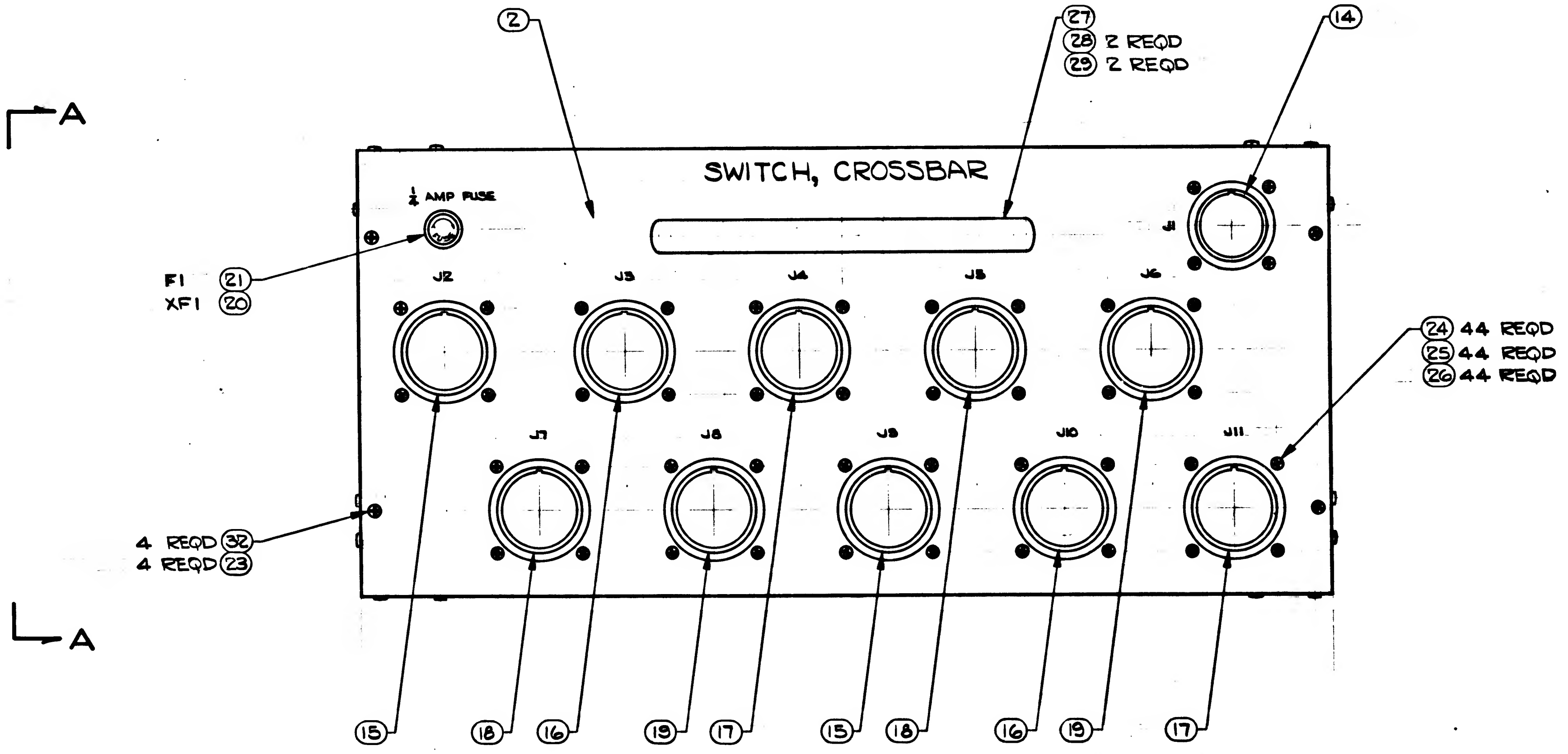
1900061

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD |
|---|---|---|---|---|---|
| G | | REPLACES REV. F WITH CHANGE<br>REVISED PER TDRR 15778 | | 2 FEB 65 | |

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. THE UNIT SHALL MEET THE REQUIREMENTS OF ITEM 35.
3. POWER INPUT SHALL BE ELECTRICALLY ISOLATED FROM THE CHASSIS. RESISTANCE BETWEEN CROSSBAR SWITCH CONDUCTORS AND THE FRAME OR BETWEEN CONDUCTORS SHALL BE 100 MEG MIN AT 500V DC.
4. THERE SHALL BE NO PROTRUSIONS OUTSIDE OF THE CHASSIS IN THIS AREA. BOTH SIDES.
5. EQUIPMENT SHALL BE FREE FROM BURRS & SHARP EDGES ON THE EXTERNAL SURFACE.
6. THE SUPPLIER'S NAME, ADDRESS, AND PART NUMBER MUST BE PLACED ON THE OUTSIDE SURFACE OF THE REAR PLATE PER ND1002122. THIS INFORMATION IS NOT TO APPEAR ON THE FRONT PANEL.
7. VENDOR ITEM - SEE SPEC CONTROL DRAWING.

REPLACES REV F WITH CHANGE



SEE NOTE 2

SEE NOTE 7

| | | | 011 | EFFEC-TIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | X | | 36 | 1800078 | SCHEMATIC DIAGRAM |
| | | | X | | 35 | ATP-1900061 | ASSEMBLY & TEST PROCED |
| | | | 1 | | 34 | 1901745 | WIRE LIST |
| | | | 8 | | 33 | 1901749-022 | SCREW, PAN HD-CROSS REC |
| | | | 4 | | 32 | 1901749-021 | SCREW, PAN HD-CROSS REC |
| | | | 26 | | 31 | 1901749-020 | SCREW, PAN HD-CROSS REC |
| | | | 2 | | 30 | 1901749-019 | SCREW, PAN HD-CROSS REC |
| | | | 2 | | 29 | 1901749-018 | WASHER, LOCK, INT TOOTH |
| | | | 2 | | 28 | 1901749-017 | SCREW, PAN HD-CROSS REC |
| | | | 1 | | 27 | 1901749-004 | HANDLE |
| | | | 56 | | 26 | 1901749-023 | SCREW, PAN HD-CROSS REC |
| | | | 46 | | 25 | 1901749-016 | WASHER, LOCK, INT TOOTH |
| | | | 46 | | 24 | 1901749-025 | NUT HEX |
| | | | 38 | | 23 | 1901749-024 | NUT, HEX SELF LOCKING |
| | | | 12 | | 22 | 1901749-003 | FASTNER, EXPANDO |
| | | | 1 | | 21 | 1901749-009 | FUSE |
| | | | 1 | | 20 | 1901749-001 | FUSE HOLDER |
| | | | 2 | | 19 | MS3127E-24-61PZ | (1901749-015) CONNECTOR |
| | | | 2 | | 18 | MS3127E-24-61PY | (1901749-014) CONNECTOR |
| | | | 2 | | 17 | MS3127E-24-61PX | (1901749-013) CONNECTOR |
| | | | 2 | | 16 | MS3127E-24-61PW | (1901749-012) CONNECTOR |
| | | | 2 | | 15 | MS3127E 24-61P | (1901749-011) CONNECTOR |
| | | | 1 | | 14 | MS3127E-20-41P | (1901749-010) CONNECTOR |
| | | | 1 | | 13 | 1901744-011 | DIODE BOARD ASSY |
| | | | 1 | | 12 | 1901811 | PLATE, MTG |
| | | | 2 | | 11 | 1901810 | SUPPORT |
| | | | 2 | | 10 | 1901809 | SUPPORT |
| | | | 2 | | 9 | 1901808 | SUPPORT |
| | | | 4 | | 8 | 1901807 | COVER STIFFNER |
| | | | 4 | | 7 | 1901806 | CORNER POST |
| | | | 2 | | 6 | 1901805 | COVER |
| | | | 1 | | 5 | 1901804 | PANEL, SIDE L.H. |
| | | | 1 | | 4 | 1901803 | PANEL, SIDE R.H. |
| | | | 1 | | 3 | 1901802 | PANEL, REAR |
| | | | 1 | | 2 | 1901801 | PANEL, FRONT |
| | | | 1 | | 1 | 1901740 | SWITCH, CROSSBAR |
| QUANTITY REQUIRED | | | | | LIST OF PARTS AND MATERIALS | | |

| SHEET 1 | SHEET 2 |
|---|---|
| REVISION STATUS OF SHEETS | |

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900048-011 | 1900004-011 | -011 |
| APPLICATION | | |

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS-9-497

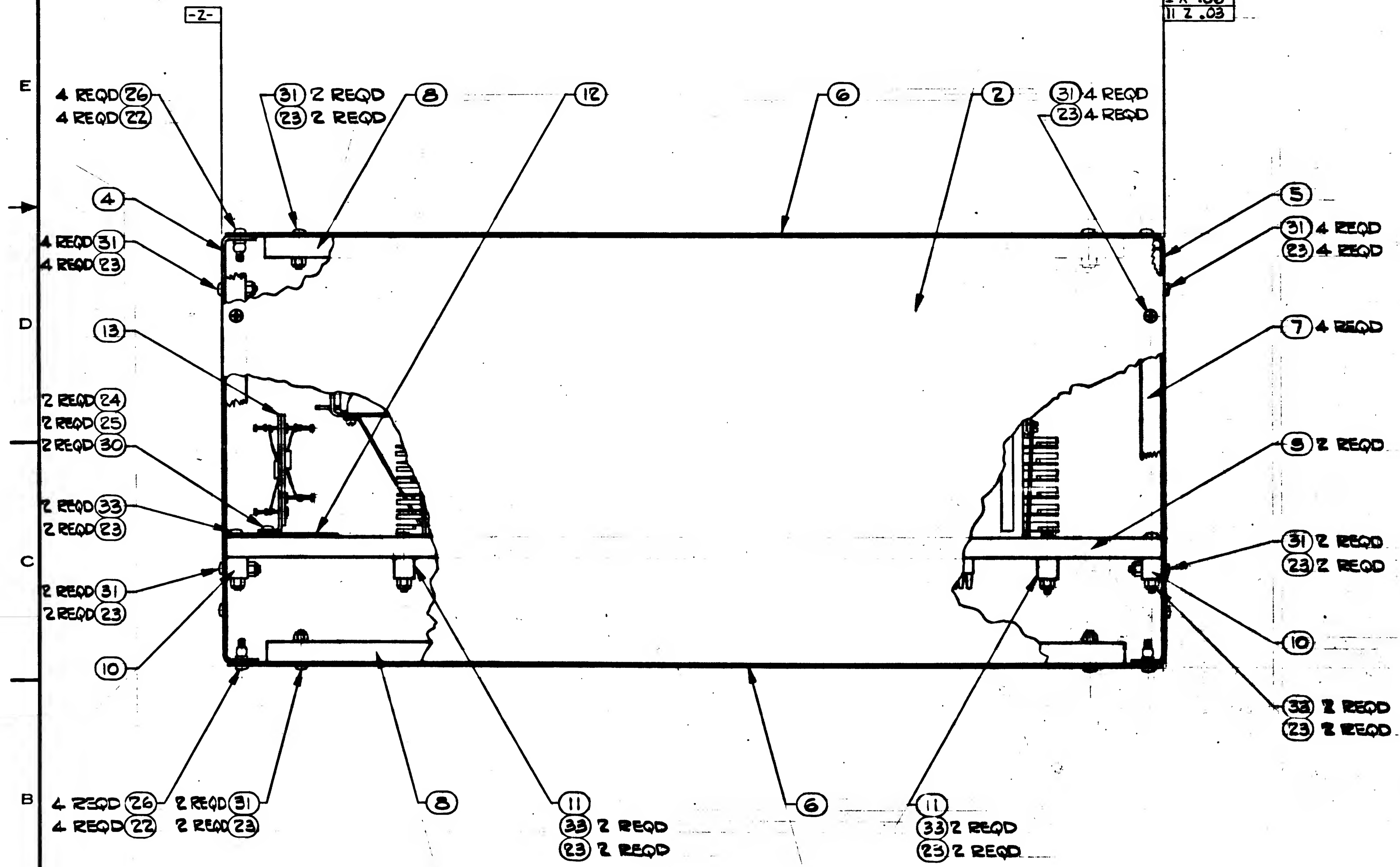
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 5 JUNE 64
CHECKED 20 AUG 64
APPROVAL J. Ziino 21 AUG 64
APPROVAL 2/1965
NASA APPROVAL
MIT APPROVAL M. J. Muller 2-9-65

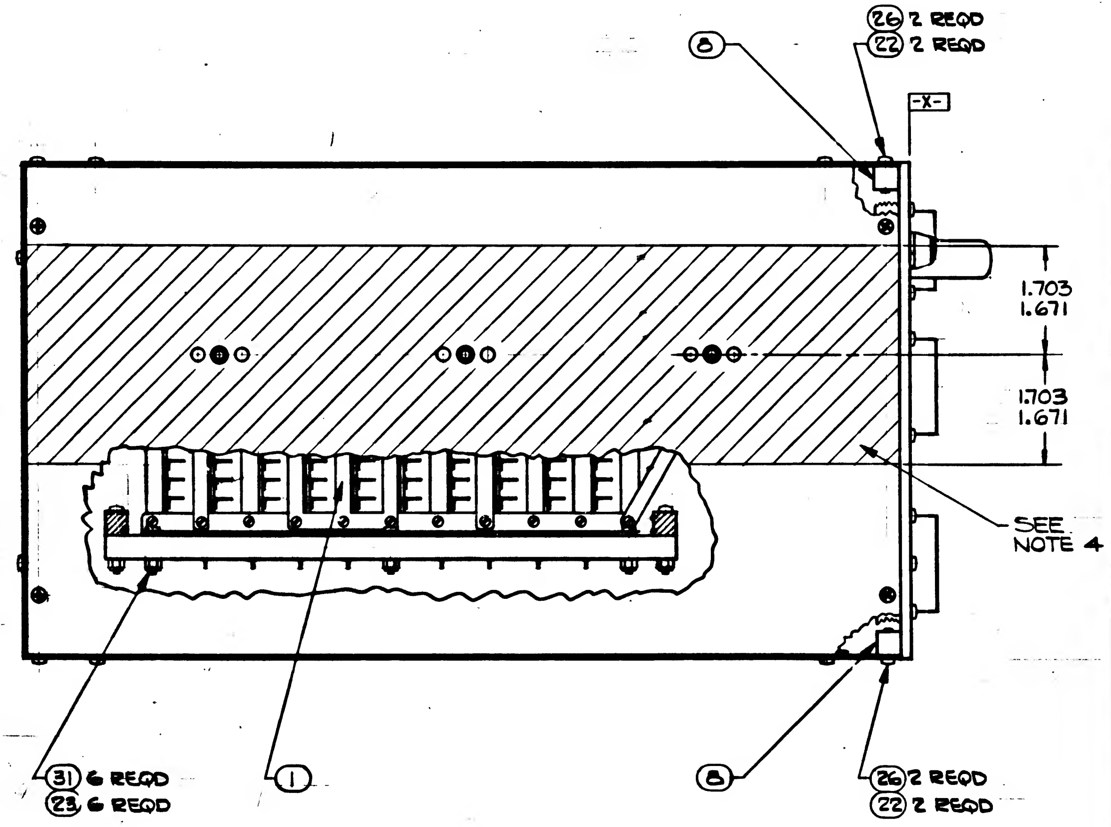
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

SWITCH, CROSSBAR
ALTERED COMMERCIAL ITEM

CODE IDENT NO.
SIZE E
1900061
SCALE FULL
SHEET 1 OF 2

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
| G | | REPLACES REV. F WITH CHANGE<br>REVISED PER TDIR .5778 | | 2 FEB 65 | |





VIEW AA

| | | |
|---|---|---|
| | | |
| | | |
| 1900048-011 | 1900004-011 | -011 |
| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
| APPLICATION | | |

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 20 Aug 64
CHECKED
APPROVAL 21 AUG 64
APPROVAL 2/23/65
NASA APPROVAL 3/9/65
MIT APPROVAL 3-9-65

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

SWITCH, CROSSBAR
ALTERED COMMERCIAL ITEM

CODE IDENT NO.
SIZE E
1900061
SCALE FULL
SHEET 2 OF 2

| REVISIONS | | | | |
|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION<br>CHG NO | DATE | APPD. |

REQUIREMENTS:

INTERPRET DWG. IN ACCORDANCE WITH MIL-D-70327.

UNIT SHALL BE A 10X10X6 TYPE F BASIC CROSSBAR SWITCH MOUNTED IN AN ENCLOSURE PER THIS DRAWING ALL CONTROL AND SIGNAL LINES ARE TO BE WIRED TO EXTERNAL CONNECTORS.

CONNECTORS: VENDOR SHALL SUPPLY AND WIRE UNIT WITH CONNECTORS AS LISTED IN THE PIN LIST. CONNECTOR LOCATION IS AS SHOWN ON THE FRONT VIEW TWISTED SHIELDED WIRE PAIRS SHALL BE USED TO WIRE THE INPUT AND OUTPUT SIGNAL LEVELS. THE SIGNAL LEVELS ARE 1&2 AND 3&6.

TWO COPIES OF SERVICE MANUALS CONTAINING A SPARE PARTS LIST, OPERATING INSTRUCTIONS, & MAINTENANCE INSTRUCTIONS SHALL BE SUPPLIED WITH EACH UNIT. A COPY OF ALL INSPECTION TEST DATA SHALL BE SUPPLIED WITH EACH UNIT.

ISOLATION: POWER INPUT SHALL BE ELECTRICALLY ISOLATED FROM THE CHASSIS. RESISTANCE BETWEEN CROSSBAR SWITCH CONDUCTORS AND FRAME OR BETWEEN CROSSBAR SWITCH CONDUCTORS SHALL BE 100 MEGOHMS MINIMUM AT 500 VDC.

EQUIPMENT SHALL BE FREE OF BURRS AND SHARP EDGES ON THE EXTERNAL SURFACE.

THE SUPPLIER'S NAME, ADDRESS, AND PART NUMBER MUST BE PLACED ON THE OUTSIDE SURFACE OF THE REAR PLATE. THIS INFORMATION IS NOT TO APPEAR ON THE FRONT PANEL.

ALL ACTUATOR AND RELAY COILS SHALL BE EQUIPPED WITH DIODE SURGE SUPPRESSORS NASA NO. 1010392.

WIRE: USE POLY VINYL 100°C WIRE, NO SMALLER THAN 24 AWG.

POWER: THE UNIT SHALL BE OPERABLE OVER A RANGE OF INPUT VOLTAGE OF 22 TO 30 VOLTS DC. AC SPARK PLUG WILL SUPPLY 27 VDC NOMINAL VOLTAGE TO THE UNIT.

FUSE: THE 27 VDC LO LINE SHALL BE FUSED WITH A ¼ AMP. FUSE. THE FUSE SHALL APPEAR ON THE FRONT PANEL, WITH THE LOCATION BEING OPTIONAL.

BLOCKING DIODE: A BLOCKING DIODE SHALL BE INSERTED IN THE 27 VDC LO LINE TO PREVENT REVERSE VOLTAGE FROM BEING APPLIED ACROSS THE SUPPRESSION DIODES, WHICH ARE BEING PLACED ACROSS ALL COILS. NASA NO. 1010391.

1 SIDES OF CHASSIS LOCATED BY 17 INCH DIMENSION MUST BE PARALLEL WITHIN 0.031 AND PERPENDICULAR TO THE FRONT PANEL WITHIN 0.062.

2 FINISH: ALODINE PER MIL-C-5541 ALL EXTERIOR SURFACES. PER ES-591

3 CHARACTERS (FUTURA DEMIBOLD) CHARACTER HEIGHT ⅛ INCH UNLESS OTHERWISE SPECIFIED. SILK SCREEN, USING SEMI-GLOSS ENAMEL, INSTRUMENT BLACK, CENTRALIZE AS SHOWN APPLY PER ND1002019.

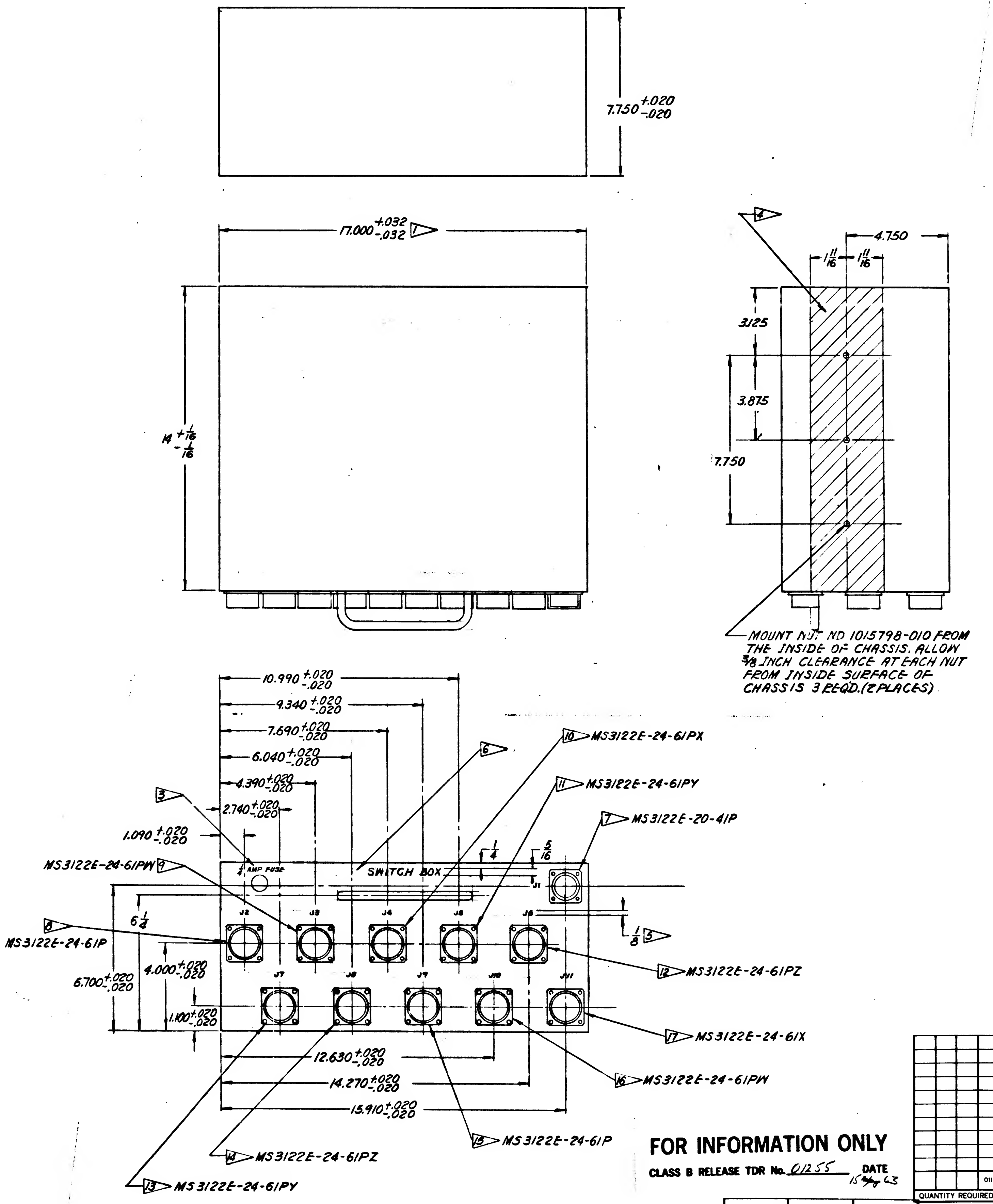
4 THERE SHALL BE NO PROTRUSIONS OUTSIDE OF THE CHASSIS IN THIS AREA.

5 MARKING OF REFERENCE DESIGNATION CHARACTERS OF DIMENSIONS SHOWN TO BE APPLIED PER ND 1002019.

6 FRONT PANEL MATERIAL, 3/16 ALUMINUM QQ-A-318, TEMPER H-32 5052-H32 (ES-2105).

DRAWINGS FOR REF.
SCHEMATIC DIAGRAM ELECTRICAL 1900078

ORIGINAL SOURCE OF SUPPLY:
JAMES CUNNINGHAM SON & CO. INC.
HONEOYE FALLS, N.Y.



MOUNT NUT ND 1015798-010 FROM THE INSIDE OF CHASSIS. ALLOW ⅜ INCH CLEARANCE AT EACH NUT FROM INSIDE SURFACE OF CHASSIS 3 REQ'D. (2 PLACES).

**FOR INFORMATION ONLY**

**CLASS B RELEASE TDR No.** 01255 **DATE** 15 May 63

| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| QUANTITY REQUIRED | | | | | LIST OF PARTS AND MATERIALS | | |

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900048 | 1900004 | |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS +1/64, -1/64 DECIMALS +.005 -.005 ANGLES +2° -2°
DO NOT SCALE THIS DRAWING
MATERIAL 6
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN E. LITZOW DATE 23 APRIL 63
CHECKED 30 APR 63
APPROVAL
APPROVAL 1 MAY 63
NASA APPROVAL 5/15/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

SWITCH BOX

CODE IDENT NO
SIZE E
1900061
SCALE 1:2
SHEET 1 OF 2

| REVISIONS | | | | |
|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | DATE | APPD |
| | | CHG NO | | |

## 7 J1

| INTERNAL CONNECTION | PIN | INTERNAL CONNECTION | PIN |
|---|---|---|---|
| CHASSIS GROUND | A | COIL H0-a | a |
| CONTACT S0-3 | B | COIL H1-a | b |
| CONTACT S0-2 | C | BLANK | c̄ |
| BLANK | D | LEVEL 4 OUTPUT | d |
| COIL S0-a | E | LEVEL 5 OUTPUT | e |
| S1 | F | BLANK | f |
| S2 | G | COIL H2-a | g |
| BLANK | H | H3- | h |
| LEVEL 1 OUTPUT } USE TWISTED | J | H4- | i |
| LEVEL 2 OUTPUT } SHIELDED PAIR | K | H5- | j |
| LEVEL 3 OUTPUT } USE TWISTED | L | H6- | k̄ |
| LEVEL 6 OUTPUT } SHIELDED PAIR | M | H7- | m |
| BLANK | N | H8- | n |
| COIL S3-a | P | BLANK | p̄ |
| S4- | R | BLANK | q |
| S5- | S | COIL H9-a | r |
| S6- | T | FUSE F1-1 | s̄ |
| S7- | U | SHIELD CONNECTION | t |
| S8- | V | | |
| S9- | W | | |
| BLANK | X | | |
| CONTACT H0-3 | Y | | |
| CONTACT H0-2 | Z | | |

## 8 J2

| INTERNAL CONNECTION | PIN | INTERNAL CONNECTION | PIN |
|---|---|---|---|
| CHANNEL 90-LEVEL 1 | A | CHANNEL 95-LEVEL 1 | h |
| 2 | B | 2 | i |
| 3 | C | 3 | j |
| 6 | D | 6 | k̄ |
| 5 | E | 5 | m |
| 4 | F | 4 | n |
| CHANNEL 91-LEVEL 1 | G | CHANNEL 96-LEVEL 1 | p̄ |
| 2 | H | 2 | q |
| 3 | J | 3 | r |
| 6 | K | 6 | s̄ |
| 5 | L | 5 | t |
| 4 | M | 4 | u |
| CHANNEL 92-LEVEL 1 | N | CHANNEL 97-LEVEL 1 | v̄ |
| 2 | P | 2 | w̄ |
| 3 | R | 3 | x̄ |
| 6 | S | 6 | y |
| 5 | T | 5 | z̄ |
| 4 | U | 4 | AA |
| CHANNEL 93-LEVEL 1 | V | CHANNEL 98-LEVEL 1 | BB |
| 2 | W | 2 | CC |
| 3 | X | 3 | DD |
| 6 | Y | 6 | EE |
| 5 | Z | 5 | FF |
| 4 | a | 4 | GG |
| CHANNEL 94-LEVEL 1 | b | CHANNEL 99-LEVEL 1 | HH |
| 2 | c̄ | 2 | JJ |
| 3 | d | 3 | KK |
| 6 | e | 6 | LL |
| 5 | f | 5 | MM |
| 4 | g | 4 | NN |
| | | SHIELD CONNECTION | PP |

## 9 J3

| INTERNAL CONNECTION | PIN | INTERNAL CONNECTION | PIN |
|---|---|---|---|
| CHANNEL 70-LEVEL 1 | A | CHANNEL 75-LEVEL 1 | h |
| 2 | B | 2 | i |
| 3 | C | 3 | j |
| 6 | D | 6 | k̄ |
| 5 | E | 5 | m |
| 4 | F | 4 | n |
| CHANNEL 71-LEVEL 1 | G | CHANNEL 76-LEVEL 1 | p̄ |
| 2 | H | 2 | q |
| 3 | J | 3 | r |
| 6 | K | 6 | s̄ |
| 5 | L | 5 | t |
| 4 | M | 4 | u |
| CHANNEL 72-LEVEL 1 | N | CHANNEL 77-LEVEL 1 | v̄ |
| 2 | P | 2 | w̄ |
| 3 | R | 3 | x̄ |
| 6 | S | 6 | y |
| 5 | T | 5 | z̄ |
| 4 | U | 4 | AA |
| CHANNEL 73-LEVEL 1 | V | CHANNEL 78-LEVEL 1 | BB |
| 2 | W | 2 | CC |
| 3 | X | 3 | DD |
| 6 | Y | 6 | EE |
| 5 | Z | 5 | FF |
| 4 | a | 4 | GG |
| CHANNEL 74-LEVEL 1 | b | CHANNEL 79-LEVEL 1 | HH |
| 2 | c̄ | 2 | JJ |
| 3 | d | 3 | KK |
| 6 | e | 6 | LL |
| 5 | f | 5 | MM |
| 4 | g | 4 | NN |
| | | SHIELD CONNECTION | PP |

## 10 J4

| INTERNAL CONNECTION | PIN | INTERNAL CONNECTION | PIN |
|---|---|---|---|
| CHANNEL 50-LEVEL 1 | A | CHANNEL 55-LEVEL 1 | h |
| 2 | B | 2 | i |
| 3 | C | 3 | j |
| 6 | D | 6 | k̄ |
| 5 | E | 5 | m |
| 4 | F | 4 | n |
| CHANNEL 51-LEVEL 1 | G | CHANNEL 56-LEVEL 1 | p̄ |
| 2 | H | 2 | q |
| 3 | J | 3 | r |
| 6 | K | 6 | s̄ |
| 5 | L | 5 | t |
| 4 | M | 4 | u |
| CHANNEL 52-LEVEL 1 | N | CHANNEL 57-LEVEL 1 | v̄ |
| 2 | P | 2 | w̄ |
| 3 | R | 3 | x̄ |
| 6 | S | 6 | y |
| 5 | T | 5 | z̄ |
| 4 | U | 4 | AA |
| CHANNEL 53-LEVEL 1 | V | CHANNEL 58-LEVEL 1 | BB |
| 2 | W | 2 | CC |
| 3 | X | 3 | DD |
| 6 | Y | 6 | EE |
| 5 | Z | 5 | FF |
| 4 | a | 4 | GG |
| CHANNEL 54-LEVEL 1 | b | CHANNEL 59-LEVEL 1 | HH |
| 2 | c̄ | 2 | JJ |
| 3 | d | 3 | KK |
| 6 | e | 6 | LL |
| 5 | f | 5 | MM |
| 4 | g | 4 | NN |
| | | SHIELD CONNECTION | PP |

## 11 J5

| INTERNAL CONNECTION | PIN | INTERNAL CONNECTION | PIN |
|---|---|---|---|
| CHANNEL 30-LEVEL 1 | A | CHANNEL 35-LEVEL 1 | h |
| 2 | B | 2 | i |
| 3 | C | 3 | j |
| 6 | D | 6 | k̄ |
| 5 | E | 5 | m |
| 4 | F | 4 | n |
| CHANNEL 31-LEVEL 1 | G | CHANNEL 36-LEVEL 1 | p̄ |
| 2 | H | 2 | q |
| 3 | J | 3 | r |
| 6 | K | 6 | s̄ |
| 5 | L | 5 | t |
| 4 | M | 4 | u |
| CHANNEL 32-LEVEL 1 | N | CHANNEL 37-LEVEL 1 | v̄ |
| 2 | P | 2 | w̄ |
| 3 | R | 3 | x̄ |
| 6 | S | 6 | y |
| 5 | T | 5 | z̄ |
| 4 | U | 4 | AA |
| CHANNEL 33-LEVEL 1 | V | CHANNEL 38-LEVEL 1 | BB |
| 2 | W | 2 | CC |
| 3 | X | 3 | DD |
| 6 | Y | 6 | EE |
| 5 | Z | 5 | FF |
| 4 | a | 4 | GG |
| CHANNEL 34-LEVEL 1 | b | CHANNEL 39-LEVEL 1 | HH |
| 2 | c̄ | 2 | JJ |
| 3 | d | 3 | KK |
| 6 | e | 6 | LL |
| 5 | f | 5 | MM |
| 4 | g | 4 | NN |
| | | SHIELD CONNECTION | PP |

## 12 J6

| INTERNAL CONNECTION | PIN | INTERNAL CONNECTION | PIN |
|---|---|---|---|
| CHANNEL 10-LEVEL 1 | A | CHANNEL 15-LEVEL 1 | h |
| 2 | B | 2 | i |
| 3 | C | 3 | j |
| 6 | D | 6 | k̄ |
| 5 | E | 5 | m |
| 4 | F | 4 | n |
| CHANNEL 11-LEVEL 1 | G | CHANNEL 16-LEVEL 1 | p̄ |
| 2 | H | 2 | q |
| 3 | J | 3 | r |
| 6 | K | 6 | s̄ |
| 5 | L | 5 | t |
| 4 | M | 4 | u |
| CHANNEL 12-LEVEL 1 | N | CHANNEL 17-LEVEL 1 | v̄ |
| 2 | P | 2 | w̄ |
| 3 | R | 3 | x̄ |
| 6 | S | 6 | y |
| 5 | T | 5 | z̄ |
| 4 | U | 4 | AA |
| CHANNEL 13-LEVEL 1 | V | CHANNEL 18-LEVEL 1 | BB |
| 2 | W | 2 | CC |
| 3 | X | 3 | DD |
| 6 | Y | 6 | EE |
| 5 | Z | 5 | FF |
| 4 | a | 4 | GG |
| CHANNEL 14-LEVEL 1 | b | CHANNEL 19-LEVEL 1 | HH |
| 2 | c̄ | 2 | JJ |
| 3 | d | 3 | KK |
| 6 | e | 6 | LL |
| 5 | f | 5 | MM |
| 4 | g | 4 | NN |
| | | SHIELD CONNECTION | PP |

## 13 J7

| INTERNAL CONNECTION | PIN | INTERNAL CONNECTION | PIN |
|---|---|---|---|
| CHANNEL 80-LEVEL 1 | A | CHANNEL 85-LEVEL 1 | h |
| 2 | B | 2 | i |
| 3 | C | 3 | j |
| 6 | D | 6 | k̄ |
| 5 | E | 5 | m |
| 4 | F | 4 | n |
| CHANNEL 81-LEVEL 1 | G | CHANNEL 86-LEVEL 1 | p̄ |
| 2 | H | 2 | q |
| 3 | J | 3 | r |
| 6 | K | 6 | s̄ |
| 5 | L | 5 | t |
| 4 | M | 4 | u |
| CHANNEL 82-LEVEL 1 | N | CHANNEL 87-LEVEL 1 | v̄ |
| 2 | P | 2 | w̄ |
| 3 | R | 3 | x̄ |
| 6 | S | 6 | y |
| 5 | T | 5 | z̄ |
| 4 | U | 4 | AA |
| CHANNEL 83-LEVEL 1 | V | CHANNEL 88-LEVEL 1 | BB |
| 2 | W | 2 | CC |
| 3 | X | 3 | DD |
| 6 | Y | 6 | EE |
| 5 | Z | 5 | FF |
| 4 | a | 4 | GG |
| CHANNEL 84-LEVEL 1 | b | CHANNEL 89-LEVEL 1 | HH |
| 2 | c̄ | 2 | JJ |
| 3 | d | 3 | KK |
| 6 | e | 6 | LL |
| 5 | f | 5 | MM |
| 4 | g | 4 | NN |
| | | SHIELD CONNECTION | PP |

## 14 J8

| INTERNAL CONNECTION | PIN | INTERNAL CONNECTION | PIN |
|---|---|---|---|
| CHANNEL 60-LEVEL 1 | A | CHANNEL 65-LEVEL 1 | h |
| 2 | B | 2 | i |
| 3 | C | 3 | j |
| 6 | D | 6 | k̄ |
| 5 | E | 5 | m |
| 4 | F | 4 | n |
| CHANNEL 61-LEVEL 1 | G | CHANNEL 66-LEVEL 1 | p̄ |
| 2 | H | 2 | q |
| 3 | J | 3 | r |
| 6 | K | 6 | s̄ |
| 5 | L | 5 | t |
| 4 | M | 4 | u |
| CHANNEL 62-LEVEL 1 | N | CHANNEL 67-LEVEL 1 | v̄ |
| 2 | P | 2 | w̄ |
| 3 | R | 3 | x̄ |
| 6 | S | 6 | y |
| 5 | T | 5 | z̄ |
| 4 | U | 4 | AA |
| CHANNEL 63-LEVEL 1 | V | CHANNEL 68-LEVEL 1 | BB |
| 2 | W | 2 | CC |
| 3 | X | 3 | DD |
| 6 | Y | 6 | EE |
| 5 | Z | 5 | FF |
| 4 | a | 4 | GG |
| CHANNEL 64-LEVEL 1 | b | CHANNEL 69-LEVEL 1 | HH |
| 2 | c̄ | 2 | JJ |
| 3 | d | 3 | KK |
| 6 | e | 6 | LL |
| 5 | f | 5 | MM |
| 4 | g | 4 | NN |
| | | SHIELD CONNECTION | PP |

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01255 DATE 15 May 63

| NEXT ASSY | USED ON |
|---|---|
| 1900048 | 1900004 |

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC SPARK PLUG DIVISION. GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN E. LITZOW 23 APRIL 63
CHECKED W. Diehl 30 APR 63
APPROVAL F. P. James
APPROVAL 1 MAY 63
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

SWITCH, BOX

CODE IDENT NO
SIZE E 1900061
SCALE
SHEET 2 OF 3

INCHES 0 1 2
PHOTOGRAPHIC SCALE ONLY

1900061

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |

15 J9

| INTERNAL CONNECTION | | PIN | INTERNAL CONNECTION | | PIN |
|---|---|---|---|---|---|
| CHANNEL 40-LEVEL | 1 | A | CHANNEL 45-LEVEL | 1 | h |
| | 2 | B | | 2 | i |
| | 3 | C | | 3 | j |
| | 6 | D | | 6 | k̄ |
| | 5 | E | | 5 | m |
| | 4 | F | | 4 | n |
| CHANNEL 41-LEVEL | 1 | G | CHANNEL 46-LEVEL | 1 | p̄ |
| | 2 | H | | 2 | q |
| | 3 | J | | 3 | r |
| | 6 | K | | 6 | s̄ |
| | 5 | L | | 5 | t |
| | 4 | M | | 4 | u |
| CHANNEL 42-LEVEL | 1 | N | CHANNEL 47-LEVEL | 1 | v̄ |
| | 2 | P | | 2 | w̄ |
| | 3 | R | | 3 | x̄ |
| | 6 | S | | 6 | y |
| | 5 | T | | 5 | z̄ |
| | 4 | U | | 4 | AA |
| CHANNEL 43-LEVEL | 1 | V | CHANNEL 48-LEVEL | 1 | BB |
| | 2 | W | | 2 | CC |
| | 3 | X | | 3 | DD |
| | 6 | Y | | 6 | EE |
| | 5 | Z | | 5 | FF |
| | 4 | a | | 4 | GG |
| CHANNEL 44-LEVEL | 1 | b | CHANNEL 49-LEVEL | 1 | HH |
| | 2 | c̄ | | 2 | JJ |
| | 3 | d | | 3 | KK |
| | 6 | e | | 6 | LL |
| | 5 | f | | 5 | MM |
| | 4 | g | | 4 | NN |
| | | | SHIELD CONNECTION | | PP |

16 J10

| INTERNAL CONNECTION | | PIN | INTERNAL CONNECTION | | PIN |
|---|---|---|---|---|---|
| CHANNEL 20-LEVEL | 1 | A | CHANNEL 25-LEVEL | 1 | h |
| | 2 | B | | 2 | i |
| | 3 | C | | 3 | j |
| | 6 | D | | 6 | k̄ |
| | 5 | E | | 5 | m |
| | 4 | F | | 4 | n |
| CHANNEL 21-LEVEL | 1 | G | CHANNEL 26-LEVEL | 1 | p̄ |
| | 2 | H | | 2 | q |
| | 3 | J | | 3 | r |
| | 6 | K | | 6 | s̄ |
| | 5 | L | | 5 | t |
| | 4 | M | | 4 | u |
| CHANNEL 22-LEVEL | 1 | N | CHANNEL 27-LEVEL | 1 | v̄ |
| | 2 | P | | 2 | w̄ |
| | 3 | R | | 3 | x̄ |
| | 6 | S | | 6 | y |
| | 5 | T | | 5 | z̄ |
| | 4 | U | | 4 | AA |
| CHANNEL 23-LEVEL | 1 | V | CHANNEL 28-LEVEL | 1 | BB |
| | 2 | W | | 2 | CC |
| | 3 | X | | 3 | DD |
| | 6 | Y | | 6 | EE |
| | 5 | Z | | 5 | FF |
| | 4 | a | | 4 | GG |
| CHANNEL 24-LEVEL | 1 | b | CHANNEL 29-LEVEL | 1 | HH |
| | 2 | c̄ | | 2 | JJ |
| | 3 | d | | 3 | KK |
| | 6 | e | | 6 | LL |
| | 5 | f | | 5 | MM |
| | 4 | g | | 4 | NN |
| | | | SHIELD CONNECTION | | PP |

17 J11

| INTERNAL CONNECTION | | PIN | INTERNAL CONNECTION | | PIN |
|---|---|---|---|---|---|
| CHANNEL 00-LEVEL | 1 | A | CHANNEL 05-LEVEL | 1 | h |
| | 2 | B | | 2 | i |
| | 3 | C | | 3 | j |
| | 6 | D | | 6 | k̄ |
| | 5 | E | | 5 | m |
| | 4 | F | | 4 | n |
| CHANNEL 01-LEVEL | 1 | G | CHANNEL 06-LEVEL | 1 | p̄ |
| | 2 | H | | 2 | q |
| | 3 | J | | 3 | r |
| | 6 | K | | 6 | s̄ |
| | 5 | L | | 5 | t |
| | 4 | M | | 4 | u |
| CHANNEL 02-LEVEL | 1 | N | CHANNEL 07-LEVEL | 1 | v̄ |
| | 2 | P | | 2 | w̄ |
| | 3 | R | | 3 | x̄ |
| | 6 | S | | 6 | y |
| | 5 | T | | 5 | z̄ |
| | 4 | U | | 4 | AA |
| CHANNEL 03-LEVEL | 1 | V | CHANNEL 08-LEVEL | 1 | BB |
| | 2 | W | | 2 | CC |
| | 3 | X | | 3 | DD |
| | 6 | Y | | 6 | EE |
| | 5 | Z | | 5 | FF |
| | 4 | a | | 4 | GG |
| CHANNEL 04-LEVEL | 1 | b | CHANNEL 09-LEVEL | 1 | HH |
| | 2 | c̄ | | 2 | JJ |
| | 3 | d | | 3 | KK |
| | 6 | e | | 6 | LL |
| | 5 | f | | 5 | MM |
| | 4 | g | | 4 | NN |
| | | | SHIELD CONNECTION | | PP |

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01255 DATE 15 May 63

| NEXT ASSY | USED ON |
|---|---|
| 1900048 | 1900004 |

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN E. LITZOW DATE 23 APRIL 63
CHECKED 30 APR 63
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

SWITCH, BOX

CODE IDENT NO
SIZE E
1900061
SCALE
SHEET 3 OF 3

INCHES
PHOTOGRAPHIC SCALE ONLY

1900061

| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
|---|---|---|---|---|---|
| A | S-2<br>B-8<br>C-3<br>C-4<br>C-8<br>C-6<br>D-7<br>D-6<br>E-8<br>F-6 | REMOVE SPARE FUSE AND HOLDER<br>ADD NOTE 9<br>CHGE DIMENSIONS 1.48 WAS .148<br>SAME .34 WAS .31<br>CHGE NOTE 7<br>ADD ± 1/16 TOLERANCE<br>CHANGE<br>NOTES | | | |
| B | G-3<br>F-3<br>E-3<br>B-3<br>B-4<br>C-5<br>H-8<br>G-8<br>F-8<br>F-8<br>E-8<br>C-5 | AC P/N 8595000-080 REMOVED FROM POWER CONN DESIG - NASA P/N REPLACED GREMAR P/N 5632 B ON INPUT CONN.<br>J1 & J2 DESIG ADDED TO CONN. INFO<br>VENT. NOTE WAS "8 ROWS OF 8 HOLES 3/8 DIA 4 PLACES TOP & BOTTOM."<br>.188 DIA HOLES & .312 DIA HOLES AND RELATED INFO ADDED REPLACES MTG ARRGT OF FASTENERS (AC P/N 8595512-001 4 REQ) AND HANDLES (AC P/N 8595498-008 2 PLACES) AND THEIR RELATED INFO.<br>SLIDE MTG NUTS WERE AC P/N 8599692-016<br>REQ'S:<br>APPROX ADDED TO NET WT.<br>±5 CPS TOL ADDED TO POWER REQ.<br>FIN P513 OF MIL-F-14072 ADDED TO FINISH<br>INPUT IMPED WAS 1 MEGOHM ±3%.<br>AC P/N 8599369, 8599363 & 8597349 REMOVED FROM KNOB REQ'T. FLAT BLACK COLOR WAS BLACK<br>INSPEC & TEST DATA COPY REQ'T ADDED TO MANUAL SUPP'T REQ'TS.<br>3 WAS "19.00 & 16 7/8 ---- WITHIN .010 AT ASSY".<br>5 ND 1002019 WAS ES-2870<br>6 REVISED (SIMILAR INFO)<br>7 REMOVED WAS "FASTENER ST OFF SHALL BE FLUSH WITH REAR SURF OF THE FRONT PANEL"<br>8 "THE SIDEWALL---EQUIP'T" ADDED<br>1.797±.020 WAS 1.547<br>3.625±.020 WAS 3.625 | DO 51403 | 2 APR 63 | |

REQUIREMENTS:

RACK MOUNTED
NET WEIGHT 21 LBS. (APPROX)
SCALE - ZERO CENTER. SHALL BE MIRROR BACKED.
POWER - 115 VOLTS ±10%, 60±5 CPS, 40 WATTS MAX.

FRONT PANEL FINISH: APPLY FINISH P513 OF SPECIFICATION MIL-F-14072. PRIME AND FINISH COATS TO BE APPLIED TO PANEL FRONT & EDGES ONLY. APPLY 2 COATS OF TT-E-529A CLASS B ENAMEL, SEMI-GLOSS, LIGHT GRAY, COLOR 26440 OF FED STD 595. NOTE; MIL-P-8585 PRIMER SUPERCEDES MIL-P-6889. REAR FACE OF FRONT PANEL TO BE PROTECTED FROM CORROSION BY CONDUCTIVE FINISH PER MIL-C-5541.

VOLTAGE RANGE: POSITIVE AND NEGATIVE DC VOLTAGES FROM 10 MICROVOLTS TO 1 VOLT FULL SCALE IN THE FOLLOWING 11 STEP SEQUENCE: (10μv, 30μv, 100μv, 0.3mv, 1mv, 3mv, 10mv, 30mv, 0.1v, 0.3v, 1v).

ACCURACY: ±3% OF FULL SCALE. VARIATION OF VOLTMETER READING WITH A 5 CPS FREQUENCY VARIATION SHALL BE LESS THAN 2%

INPUT IMPEDANCE: 1 MEGOHM OR GREATER.

GROUNDING ELECTRICALLY: INPUT LO & POWER LO MUST BE ISOLATED FROM EACH OTHER & FROM THE CHASSIS

KNOBS SHALL BE PER MS91528 TYPE F AND K WHERE PRACTICAL. EXCEPT WHERE KNOB COLOR IS PART OF A COLOR CODE, ALL KNOBS SHALL BE FLAT BLACK.

TWO COPIES OF SERVICE MANUALS CONTAINING A SPARE PART LIST, SCHEMATIC DIAGRAM, OPERATING INSTRUCTIONS, MAINTENANCE INSTRUCTIONS AND CALIBRATION PROCEDURES AND ONE COPY OF ALL INSPECTION TEST DATA SHALL BE SUPPLIED WITH EACH UNIT.

THIS INSTRUMENT SHALL PASS ALL TESTS CALLED OUT IN ES-
THIS INSTRUMENT SHALL BE DESIGNED TO MEET THE ENVIRONMENTAL REQUIRENTS OF (ES- )ND-

THE SUPPLIERS NAME, ADDRESS AND PART NUMBER SHALL BE PLACED ON THE OUTSIDE SURFACE OF THE REAR PLATE. THIS INFORMATION SHALL NOT APPEAR ON THE FRONT PANEL.

1 CONNECTOR PIN INFORMATION:

| PIN | CONNECT TO |
|---|---|
| A | CHASSIS |
| B,C | OPEN |
| D | POWER HI |
| E | POWER LO |
| F,G,H | OPEN |

2 DECIMAL TOLERANCES AS FOLLOWS: $.000^{+.005}_{-.005}$, $.00^{+.02}_{-.02}$.

3 19.00 & 16 7/8 DIMENSIONS OF PANEL & CHASSIS TO BE CENTRALIZED WITHIN .020 AT ASSEMBLY. SIDES OF CHASSIS LOCATED BY 16 7/8 DIM MUST BE PARALLEL WITHIN .031 AND PERPENDICULAR TO REAR SURFACE OF FRONT PANEL WITHIN .062

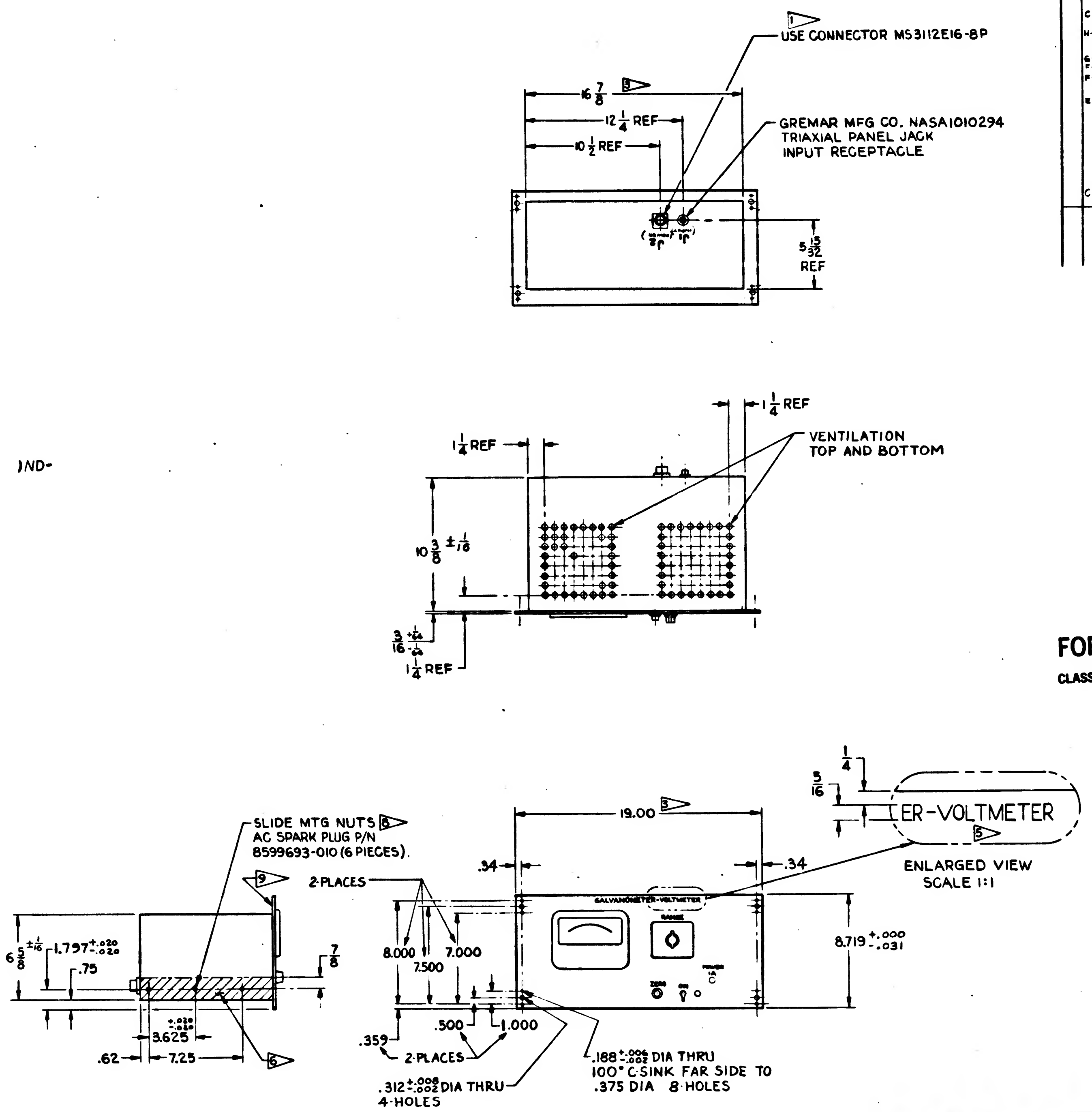
5 CHARACTERS PER ND-1002019 (FUTURA DEMIBOLD) CHARACTER HEIGHT 1/8, EXCEPT WHERE OTHERWISE SPECIFIED. SILK SCREEN USING ENAMEL, SEMI-GLOSS INSTRUMENT BLACK, COLOR 514 OF ANA157.

6 THERE SHALL BE NO PROTRUSIONS OUTSIDE OF THE CHASSIS IN THIS AREA.

8 MOUNT NUT FROM THE INSIDE OF THE CHASSIS. ALLOW 3/8 IN SCREW CLEARANCE AT EACH NUT FROM THE INSIDE SURFACE OF THE CHASSIS. THE SIDEWALL SHALL HAVE SUFFICIENT STRENGTH IN THIS AREA TO SUPPORT THE EQUIPMENT.

DATA SOURCE: MICROVOLT-AMMETER MODEL NO. 425AR
HEWLETT PACKARD CO.
1500 PAGE MILL ROAD
PALO ALTO, CALIFORNIA

9 BORDER AREA WITHIN 9/16" OF THE PANEL EDGE, ON THE REAR SURFACE OF THE FRONT PANEL, SHALL BE CO-PLANAR AND FREE OF PROTRUSIONS.



**FOR INFORMATION ONLY**
CLASS B RELEASE TDR No. 00444 DATE 24 4.63

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | TO BE ASSIGNED | AMMETER (MODEL NO. 425AR) |
| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| QUANTITY REQUIRED | | | | | LIST OF PARTS AND MATERIALS | |

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900034-04 | 1900004 | |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS +1/32 -1/32
DECIMALS + 2 -
ANGLES +2° -2°
DO NOT SCALE THIS DRAWING

MATERIAL FRONT PANEL 3/16 AL ALY, QQ-A-318, TEMPER H-32
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN L. COOPER DATE 22 JAN 63
CHECKED C. Pianda 23 JAN 63
APPROVAL 5 FEB 63
APPROVAL 5 APR 63
NASA APPROVAL 4-24-63
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON TEXAS

GALVANOMETER - VOLTMETER

CODE IDENT NO
SIZE E
1900062
SCALE 1:4
SHEET

1900062 B

INCHES 0 1 2
PHOTOGRAPHIC SCALE ONLY

REQUIREMENTS:

RACK MOUNTED
NET WEIGHT 21 LBS. (APPROX)
SCALE - ZERO CENTER. SHALL BE MIRROR BACKED.
POWER - 115 VOLTS ± 10V, 60 ± 5 CPS, 40 WATTS MAX.

FRONT PANEL FINISH: APPLY FINISH P513 OF SPECIFICATION MIL-F-14072. PRIME AND FINISH COATS TO BE APPLIED TO PANEL FRONT & EDGES ONLY. APPLY 2 COATS OF TT-E-529A CLASS B ENAMEL, SEMI-GLOSS, LIGHT GRAY, COLOR 26440 OF FED STD 595. NOTE; MIL-P-8585 PRIMER SUPERSEDES MIL-P-6889.

VOLTAGE RANGE: POSITIVE AND NEGATIVE DC VOLTAGES FROM 10 MICROVOLTS TO 1 VOLT FULL SCALE IN THE FOLLOWING 11 STEP SEQUENCE: (10µv, 30µv, 100µv, 0.3mv, 1mv, 3mv, 10mv, 30mv, 0.1v, 0.3v, 1v CALIB).

ACCURACY: MAX ERROR SHALL BE LESS THAN 3% OF FULL SCALE. VARIATION OF VOLTMETER READING WITH A 5 CPS POWER LINE FREQUENCY VARIATION SHALL BE LESS THAN 2%.

INPUT IMPEDANCE: 1 MEGOHM ± 3%.

GROUNDING ELECTRICALLY: INPUT LO & POWER LO MUST BE ISOLATED FROM EACH OTHER & FROM THE CHASSIS

KNOBS SHALL BE PER MS91528 TYPE F AND K WHERE PRACTICAL. EXCEPT WHERE KNOB COLOR IS PART OF A COLOR CODE, ALL KNOBS SHALL BE FLAT BLACK.

TWO COPIES OF SERVICE MANUALS CONTAINING A SPARE PART LIST, SCHEMATIC DIAGRAM, OPERATING INSTRUCTIONS, MAINTENANCE INSTRUCTIONS AND CALIBRATION PROCEDURES AND ONE COPY OF ALL INSPECTION TEST DATA SHALL BE SUPPLIED WITH EACH UNIT.

THIS INSTRUMENT SHALL PASS ALL TESTS CALLED OUT IN ATP 1900062.

THE SUPPLIERS NAME, ADDRESS AND PART NUMBER SHALL BE PLACED ON THE OUTSIDE SURFACE OF THE REAR PLATE. THIS INFORMATION SHALL NOT APPEAR ON THE FRONT PANEL.

1▷ CONNECTOR PIN INFORMATION:

| PIN | CONNECT TO |
|---|---|
| A | CHASSIS |
| B,C | OPEN |
| D | POWER HI |
| E | POWER LO |
| F,G,H | OPEN |

2▷ DECIMAL TOLERANCES AS FOLLOWS: $.000^{+.005}_{-.005}$, $.00^{+.02}_{-.02}$.

3▷ 19.00 & 16 7/8 DIMENSIONS OF PANEL & CHASSIS TO BE CENTRALIZED WITHIN .020 AT ASSEMBLY. SIDES OF CHASSIS LOCATED BY 16 7/8 DIM MUST BE PARALLEL WITHIN .031 AND PERPENDICULAR TO REAR SURFACE OF FRONT PANEL WITHIN .062

5▷ CHARACTERS PER ND-1002122 (FUTURA DEMIBOLD) CHARACTER HEIGHT 1/8, EXCEPT WHERE OTHERWISE SPECIFIED. SILK SCREEN USING ENAMEL, SEMI-GLOSS INSTRUMENT BLACK, COLOR 514 OF ANA157. APPLY PER ND-1002019.

6▷ THERE SHALL BE NO PROTRUSIONS OUTSIDE OF THE CHASSIS IN THIS AREA.

8▷ MOUNT NUT FROM THE INSIDE OF THE CHASSIS. ALLOW 3/8 IN SCREW CLEARANCE AT EACH NUT FROM THE INSIDE SURFACE OF THE CHASSIS. THE SIDEWALL SHALL HAVE SUFFICIENT STRENGTH IN THIS AREA TO SUPPORT THE EQUIPMENT.

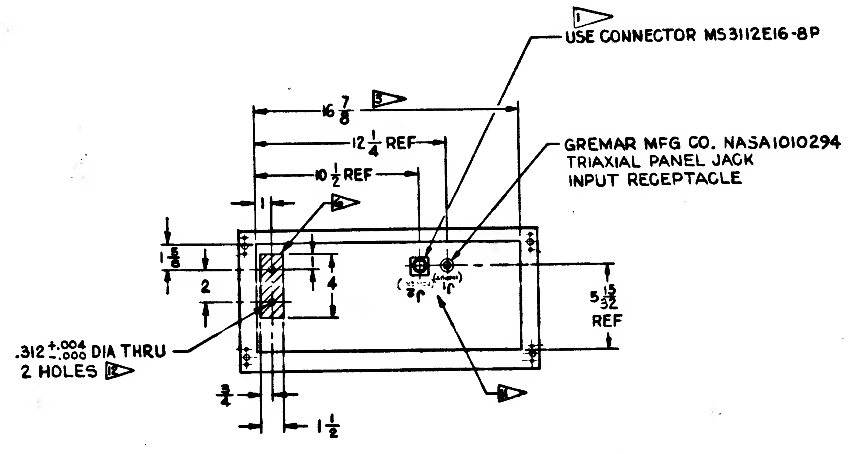
DATA SOURCE: MICROVOLT-AMMETER MODEL NO. 425AR
HEWLETT PACKARD CO.
1500 PAGE MILL ROAD
PALO ALTO, CALIFORNIA

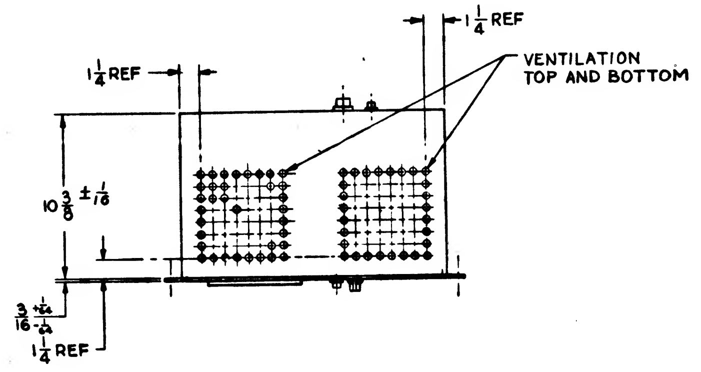
9▷ BORDER AREA WITHIN 9/16" OF THE PANEL EDGE, ON THE REAR SURFACE OF THE FRONT PANEL, SHALL BE CO-PLANAR AND FREE OF PROTRUSIONS.

10▷ POWER ON LAMP SHALL HAVE GREEN LENS.

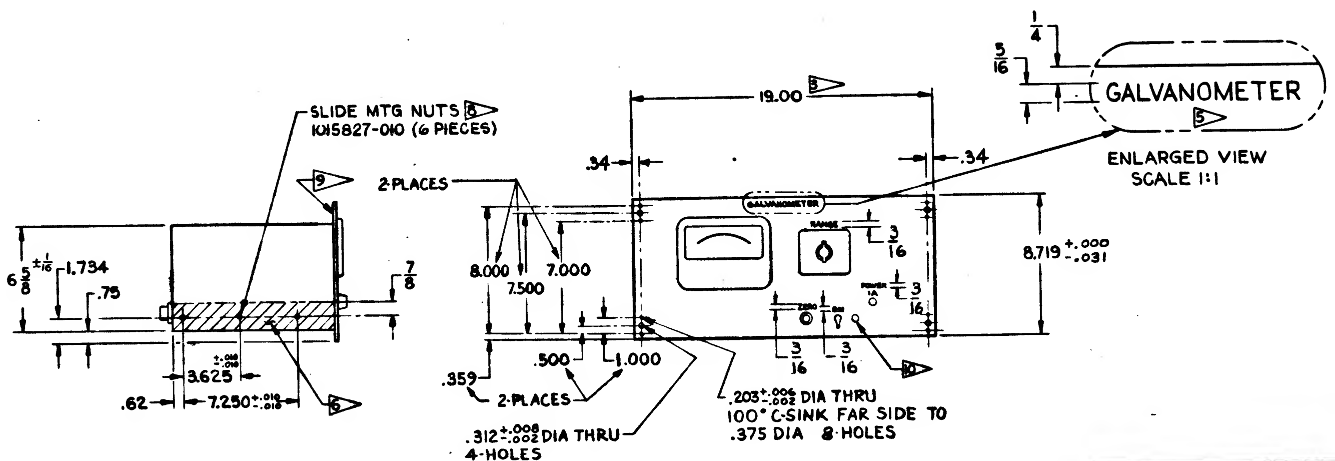
11▷ MARKING OF REFERENCE DESIGNATION CHARACTERS TO BE APPLIED PER ND-1002019. CHARACTER HEIGHT 1/8 UNLESS OTHERWISE SPECIFIED.

12▷ 1/2 INCH CLEARANCE TO BE PROVIDED FROM INSIDE OF REAR PANEL FOR THESE HOLES.





FOR INFORMATION ONLY
CLASS B RELEASE TDR No. 00999 DATE 24 Ap. 63



REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD |
|---|---|---|---|---|---|
| A | B-2<br>B-8<br>C-3<br>C-4<br>C-8<br>C-6<br>D-7<br>D-6<br>E-8<br>F-8 | Remove Spare Fuse And Holder<br>Add Note 9▷<br>Chge Dimensions. 1.48 was .148<br>Same .34 was .31<br>Chge Note 7▷<br>Add ± 1/16 Tolerance.<br>Change<br>Notes | | | |
| B | G-3<br><br><br>F-3<br>E-3<br><br>B-3<br>B-4<br><br><br><br><br>C-5<br><br>H-8<br><br><br>G-8<br>F-8<br>F-8<br><br><br>E-8<br><br><br><br><br><br><br><br><br>C-5 | AC P/N 8595000-080 REMOVED FROM POWER CONN DESIG - NASA P/N REPLACED GREMAR P/N 5632 B ON INPUT CONN.<br>J1 & J2 DESIG ADDED TO CONN. INFO.<br>VENT. NOTE WAS "8-ROWS OF 8-HOLES 3/8 DIA 4-PLACES TOP & BOTTOM."<br>.188 DIA HOLES & .312 DIA HOLES AND RELATED INFO ADDED REPLACES MTG ARRGT OF FASTENERS (AC P/N 8595512-001 4-REQ) AND HANDLES (AC P/N 8595498-008 2-PLACES) AND THEIR RELATED INFO.<br>SLIDE MTG NUTS WERE AC P/N 8599692-016<br>REQ'S:<br>APPROX ADDED TO NET WT.<br>±5CPS TOL ADDED TO POWER REQ.<br>FIN P513 OF MIL-F-14072 ADDED TO FINISH<br>INPUT IMPED WAS 1-MEGOHM ± 3%<br>AC P/N 8599369, 8599363 & 8597049 REMOVED FROM KNOB REQ'T. FLAT BLACK COLOR WAS BLACK<br>INSPEC & TEST DATA COPY REQ'T ADDED TO MANUAL SUPP'T REQ'TS.<br>3▷ WAS "19.00 & 16 7/8 ---- WITHIN .010 AT ASSY".<br>5▷ ND 1002019 WAS ES-2870<br>6▷ REVISED (SIMILAR INFO)<br>7▷ REMOVED WAS "FASTENER ST OF FI SHALL BE FLUSH WITH REAR SURF OF THE FRONT PANEL"<br>8▷ "THE SIDEWALL --- EQUIP'T" ADDED<br>1.797 ±.020 WAS 1.547<br>3.625 ±.020 WAS 3.625 | DO 51403 | 2 APR 63 | WEV |
| B1 | | CHANGE IN ACCORDANCE WITH MXC-186734. | MXC-186734 | 24 MAY 63 | JHH<br>H.F.R |
| C | | CHANGE IN ACCORDANCE WITH MXC 187966 PER TDRR 03728 | | 12 JUL 63 | C.A.M.<br>C4F |

M

| | | | | | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | | | | TO BE ASSIGNED | AMMETER (MODEL NO. 425AR) |
| | | | 011 | EFFECTIVITY | | | |
| QUANTITY REQUIRED | | | | | LIST OF PARTS AND MATERIALS | | |

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900034-011 | 1900004 | |
| APPLICATION | | |

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS +1/32 -1/32
DECIMALS + 2▷ -
ANGLES +2° -2°
DO NOT SCALE THIS DRAWING
MATERIAL FRONT PANEL 3/16 AL ALY, QQ-A-318, TEMPER H-32
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN L. COOPER DATE 22 JAN 63
CHECKED C. Pinjda 23 JAN 63
APPROVAL 5 APR 63
APPROVAL 5 Apr 63
NASA APPROVAL 4/24/63
MIT APPROVAL 24 Ap. 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

GALVANOMETER

CODE IDENT NO.
SIZE E
1900062
SCALE 1:4
SHEET —

1900062 C

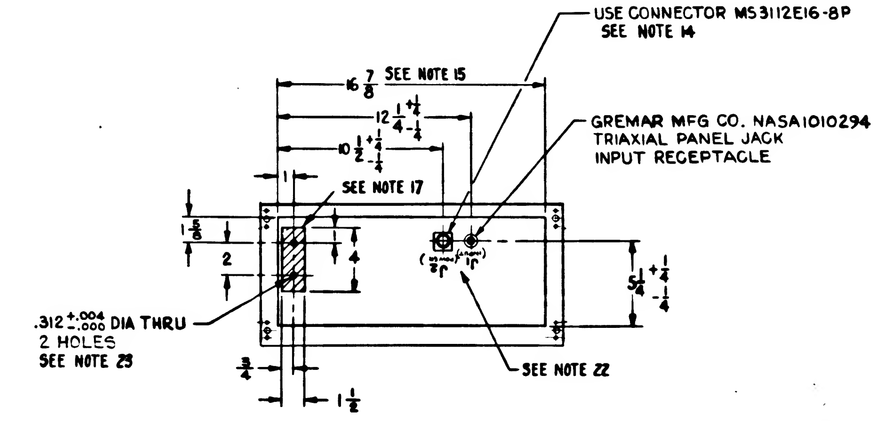
INCHES
PHOTOGRAPHIC SCALE ONLY

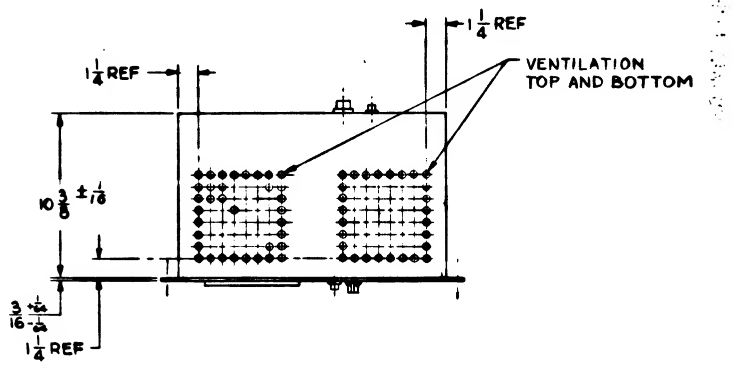
REQUIREMENTS:

1. RACK MOUNTED
2. NET WEIGHT 21 LBS. (APPROX)
3. SCALE - ZERO CENTER. SHALL BE MIRROR BACKED.
4. POWER - 115 VOLTS ± 10V, 60 ± 5 CPS, 40 WATTS MAX.
5. FRONT PANEL FINISH: APPLY FINISH P513 OF SPECIFICATION MIL-F-14072. PRIME AND FINISH COATS TO BE APPLIED TO PANEL FRONT & EDGES ONLY. APPLY 2 COATS OF TT-E-529A CLASS B ENAMEL, SEMI-GLOSS, LIGHT GRAY, COLOR 26440 OF FED STD595. NOTE; MIL-P-8585 PRIMER SUPERSEDES MIL-P-6889.
6. VOLTAGE RANGE: POSITIVE AND NEGATIVE DC VOLTAGES FROM 10 MICROVOLTS TO 1 VOLT FULL SCALE IN THE FOLLOWING 11 STEP SEQUENCE: (10µv, 30µv, 100µv, 0.3mv, 1mv, 3mv, 10mv, 30mv, 0.1v, 0.3v, 1v CALIB).
7. ACCURACY: MAX ERROR SHALL BE LESS THAN 3% OF FULL SCALE. VARIATION OF VOLTMETER READING WITH A 5 CPS POWER LINE FREQUENCY VARIATION SHALL BE LESS THAN 2%.
8. INPUT IMPEDANCE: 1 MEGOHM ± 3%.
9. GROUNDING ELECTRICALLY: INPUT LO & POWER LO MUST BE ISOLATED FROM EACH OTHER & FROM THE CHASSIS
10. KNOBS SHALL BE PER MS91528 TYPE F AND K WHERE PRACTICAL. EXCEPT WHERE KNOB COLOR IS PART OF A COLOR CODE, ALL KNOBS SHALL BE FLAT BLACK.
11. TWO COPIES OF SERVICE MANUALS CONTAINING A SPARE PART LIST, SCHEMATIC DIAGRAM, OPERATING INSTRUCTIONS, MAINTENANCE INSTRUCTIONS AND CALIBRATION PROCEDURES AND ONE COPY OF ALL INSPECTION TEST DATA SHALL BE SUPPLIED WITH EACH UNIT.
12. THIS INSTRUMENT SHALL PASS ALL TESTS CALLED OUT IN ATP 1900062.
13. THE SUPPLIERS NAME, ADDRESS AND PART NUMBER SHALL BE PLACED ON THE OUTSIDE SURFACE OF THE REAR PLATE. THIS INFORMATION SHALL NOT APPEAR ON THE FRONT PANEL.
14. CONNECTOR PIN INFORMATION:

| PIN | CONNECT TO |
|---|---|
| A | CHASSIS |
| B,C | OPEN |
| D | POWER HI |
| E | POWER LO |
| F,G,H | OPEN |

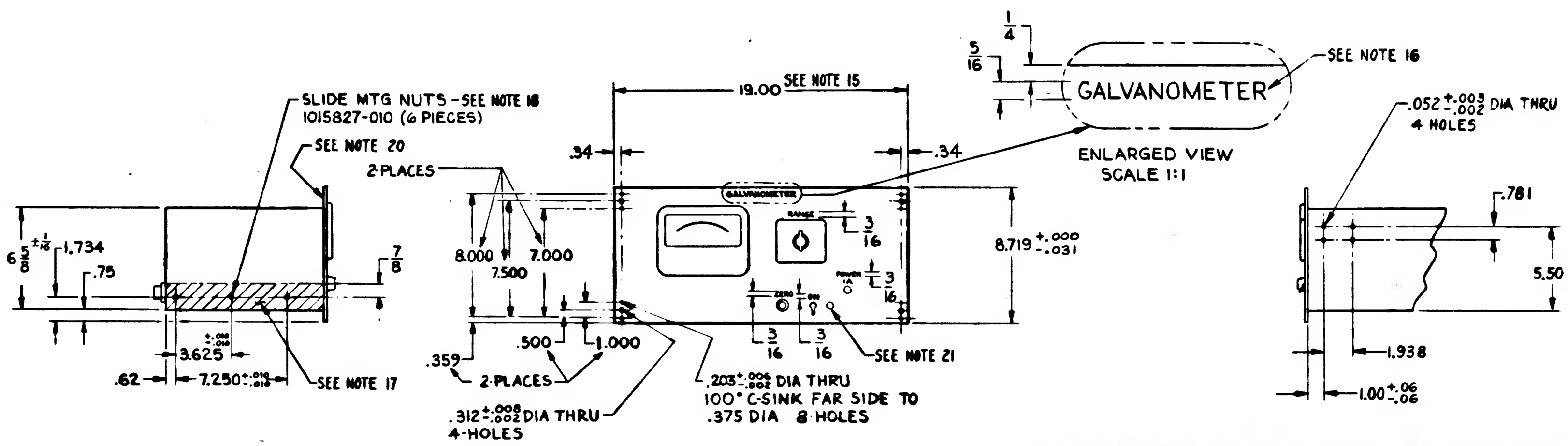
15. 19.00 & 16 7/8 DIMENSIONS OF PANEL & CHASSIS TO BE CENTRALIZED WITHIN .020 AT ASSEMBLY. SIDES OF CHASSIS LOCATED BY 16 7/8 DIM MUST BE PARALLEL WITHIN .031 AND PERPENDICULAR TO REAR SURFACE OF FRONT PANEL WITHIN .062
16. CHARACTERS PER ND-1002122 (FUTURA DEMIBOLD) CHARACTER HEIGHT 1/8, EXCEPT WHERE OTHERWISE SPECIFIED. SILK SCREEN USING ENAMEL, SEMI-GLOSS INSTRUMENT BLACK, COLOR 514 OF ANA157. APPLY PER ND-1002019.
17. THERE SHALL BE NO PROTRUSIONS OUTSIDE OF THE CHASSIS IN THIS AREA.
18. MOUNT NUT FROM THE INSIDE OF THE CHASSIS. ALLOW 3/8 IN SCREW CLEARANCE AT EACH NUT FROM THE INSIDE SURFACE OF THE CHASSIS. THE SIDEWALL SHALL HAVE SUFFICIENT STRENGTH IN THIS AREA TO SUPPORT THE EQUIPMENT.
19. DATA SOURCE: MICROVOLT-AMMETER MODEL NO. 425AR
    HEWLETT PACKARD CO.
    1500 PAGE MILL ROAD
    PALO ALTO, CALIFORNIA
20. BORDER AREA WITHIN 9/16" OF THE PANEL EDGE, ON THE REAR SURFACE OF THE FRONT PANEL, SHALL BE CO-PLANAR AND FREE OF PROTRUSIONS.
21. POWER ON LAMP SHALL HAVE GREEN LENS.
22. MARKING OF REFERENCE DESIGNATION CHARACTERS TO BE APPLIED PER ND-1002019. CHARACTER HEIGHT 1/8 UNLESS OTHERWISE SPECIFIED.
23. 1/2 INCH CLEARANCE TO BE PROVIDED FROM INSIDE OF REAR PANEL FOR THESE HOLES.





# FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00999 DATE 24



REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
|---|---|---|---|---|---|
| A | E-2<br>B-8<br>C-3<br>C-4<br>C-8<br>C-6<br>D-7<br>D-6<br>E-8<br>F-6 | REMOVE SPARE FUSE AND HOLDER<br>ADD NOTE 9<br>CHGE DIMENSIONS. 1.48 WAS .148<br>SAME .34 WAS .31<br>CHGE NOTE 7<br>ADD ± 1/16 TOLERANCE<br>CHANGE<br>NOTES | | | |
| B | G-3<br>F-3<br>E-3<br>B-3<br>B-4<br>C-5<br>H-8<br>G-8<br>F-8<br>F-8<br>E-8<br>C-5 | AC P/N 8595000-080 REMOVED FROM POWER CONN DESIG - NASA P/N REPLACED GREMAR P/N 5632 B ON INPUT CONN. J1 & J2 DESIG ADDED TO CONN. INFO.<br>VENT. NOTE WAS "8-ROWS OF 8-HOLES 3/8 DIA 4 PLACES TOP & BOTTOM."<br>.188 DIA HOLES & .312 DIA HOLES AND RELATED INFO ADDED REPLACES MTG ARRGT OF FASTENERS (AC P/N 8595512-001 4 REQ) AND HANDLES (AC P/N 8595498-008 2 PLACES) AND THEIR RELATED INFO.<br>SLIDE MTG NUTS WERE AC P/N 8599692-016<br>REQ'S:<br>APPROX ADDED TO NET WT.<br>± 5CPS TOL ADDED TO POWER REQ.<br>FIN P513 OF MIL-F-14072 ADDED TO FINISH<br>INPUT IMPED WAS 1-MEGOHM ± 3%.<br>AC P/N 8599369, 8599363 & 8597049 REMOVED FROM KNOB REQ'T. FLAT BLACK COLOR WAS BLACK<br>INSPEC & TEST DATA COPY REQ'T ADDED TO MANUAL SUPP'T REQ'TS.<br>15 WAS "19.00 & 16 7/8 ---- WITHIN .010 AT ASSY".<br>16 ND 1002019 WAS ES-2870<br>17 REVISED (SIMILAR INFO)<br>20 REMOVED WAS "FASTENER STOPS SHALL BE FLUSH WITH REAR SURF OF THE FRONT PANEL"<br>18 "THE SIDEWALL --- EQUIP'T" ADDED<br>1.797 ± .020 WAS 1.547<br>3.625 ± .020 WAS 3.625 | DO 51403 | 2 APR 63 | REV |
| B1 | | CHANGE IN ACCORDANCE WITH MXC-186734. | MXC-186734 | 24 MAY 63 | JHH<br>A.H.R. |
| C | | CHANGE IN ACCORDANCE WITH MXC 187966 PER TDRR 03728 | | 12 JUL 63<br>[illegible] | C.A.M.<br>C.A.P.<br>W.N. |
| D | — | CHANGE IN ACCORDANCE WITH MXC 191977 PER TDRR 08201 | — | 4 NOV 63 | A.EL |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | TO BE ASSIGNED | AMMETER (MODEL NO 425AR) |
| | | | 011 | EFFECTIVITY | ITEM NO | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| QUANTITY REQUIRED | | | | | | LIST OF PARTS AND MATERIALS | |

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900034-011 | 1900034 | |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + 1/32 - 1/32
DECIMALS ± .000 +.005 -.005; ± .00 +.02 -.02
ANGLES + 2° - 2°
DO NOT SCALE THIS DRAWING
MATERIAL FRONT PANEL 3/16 AL ALY, QQ-A-318, TEMPER H-32
CONTRACT

AC SPARK PLUG DIVISION. GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN L. COOPER DATE 22 JAN 63
CHECKED Pajda 23 JAN 63
APPROVAL [illegible] 5 APR 63
APPROVAL A Fidel 5 APR 63
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

GALVANOMETER

CODE IDENT NO
SIZE E
1900062
SCALE 1:4
SHEET —

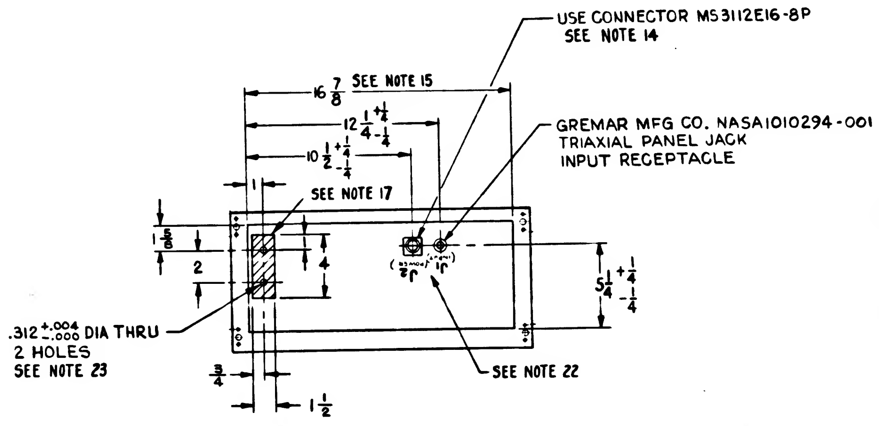
1900062 D B

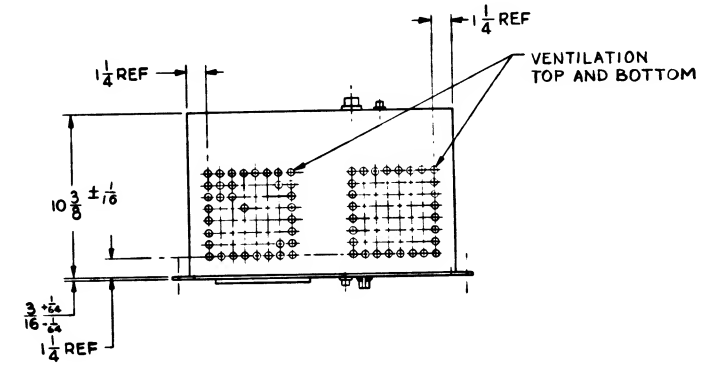
REQUIREMENTS:

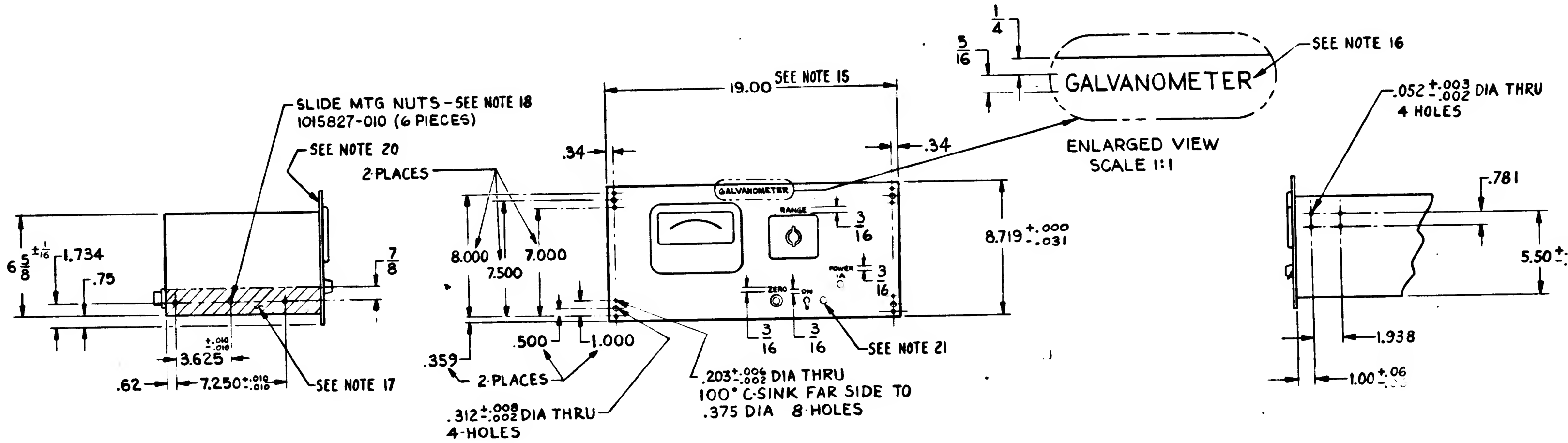
1. RACK MOUNTED
2. NET WEIGHT 21 LBS. (APPROX)
3. SCALE- ZERO CENTER. SHALL BE MIRROR BACKED.
4. POWER- 115 VOLTS ±10V, 60±5 CPS, 40 WATTS MAX.
5. FRONT PANEL FINISH: APPLY FINISH P513 OF SPECIFICATION MIL-F-14072. PRIME AND FINISH COATS TO BE APPLIED TO PANEL FRONT & EDGES ONLY. APPLY 2 COATS OF TT-E-529A CLASS B ENAMEL, SEMI-GLOSS, LIGHT GRAY, COLOR 26440 OF FED STD 595. NOTE; MIL-P-8585 PRIMER SUPERSEDES MIL-P-6889.
6. VOLTAGE RANGE: POSITIVE AND NEGATIVE DC VOLTAGES FROM 10 MICROVOLTS TO 1 VOLT FULL SCALE IN THE FOLLOWING 11 STEP SEQUENCE: (10µv, 30µv, 100µv, 0.3mv, 1mv, 3mv, 10mv, 30mv, 0.1v, 0.3v, 1v).
7. ACCURACY: MAX ERROR SHALL BE LESS THAN 3% OF FULL SCALE. VARIATION OF VOLTMETER READING WITH A 5 CPS POWER LINE FREQUENCY VARIATION SHALL BE LESS THAN 2%.
8. INPUT IMPEDANCE: 1 MEGOHM ±3%.
9. GROUNDING ELECTRICALLY: INPUT LO & POWER LO MUST BE ISOLATED FROM EACH OTHER & FROM THE CHASSIS
10. KNOBS SHALL BE PER MS91528 TYPE F AND K WHERE PRACTICAL. EXCEPT WHERE KNOB COLOR IS PART OF A COLOR CODE, ALL KNOBS SHALL BE FLAT BLACK.
11. TWO COPIES OF SERVICE MANUALS CONTAINING A SPARE PART LIST, SCHEMATIC DIAGRAM, OPERATING INSTRUCTIONS, MAINTENANCE INSTRUCTIONS AND CALIBRATION PROCEDURES AND ONE COPY OF ALL INSPECTION TEST DATA SHALL BE SUPPLIED WITH EACH UNIT.
12. THIS INSTRUMENT SHALL PASS ALL TESTS CALLED OUT IN ATP 1900062.
13. THE SUPPLIERS NAME, ADDRESS AND PART NUMBER SHALL BE PLACED ON THE OUTSIDE SURFACE OF THE REAR PLATE. THIS INFORMATION SHALL NOT APPEAR ON THE FRONT PANEL.
14. CONNECTOR PIN INFORMATION:

| PIN | CONNECT TO |
|---|---|
| A | CHASSIS |
| B,C | OPEN |
| D | POWER HI |
| E | POWER LO |
| F,G,H | OPEN |

15. 19.00 & 16 7/8 DIMENSIONS OF PANEL & CHASSIS TO BE CENTRALIZED WITHIN .020 AT ASSEMBLY. SIDES OF CHASSIS LOCATED BY 16 7/8 DIM MUST BE PARALLEL WITHIN .031 AND PERPENDICULAR TO REAR SURFACE OF FRONT PANEL WITHIN .062
16. CHARACTERS PER ND-1002122 (FUTURA DEMIBOLD) CHARACTER HEIGHT 1/8, EXCEPT WHERE OTHERWISE SPECIFIED. SILK SCREEN USING ENAMEL, SEMI-GLOSS INSTRUMENT BLACK, COLOR 514 OF ANA 157. APPLY PER ND-1002019.
17. THERE SHALL BE NO PROTRUSIONS OUTSIDE OF THE CHASSIS IN THIS AREA.
18. MOUNT NUT FROM THE INSIDE OF THE CHASSIS. ALLOW 3/8 IN SCREW CLEARANCE AT EACH NUT FROM THE INSIDE SURFACE OF THE CHASSIS. THE SIDEWALL SHALL HAVE SUFFICIENT STRENGTH IN THIS AREA TO SUPPORT THE EQUIPMENT.
19. DATA SOURCE: MICROVOLT-AMMETER MODEL NO. H27-425AR.
    HEWLETT PACKARD CO.
    1500 PAGE MILL ROAD
    PALO ALTO, CALIFORNIA
20. BORDER AREA WITHIN 9/16" OF THE PANEL EDGE, ON THE REAR SURFACE OF THE FRONT PANEL, SHALL BE CO-PLANAR AND FREE OF PROTRUSIONS.
21. POWER ON LAMP SHALL HAVE GREEN LENS.
22. MARKING OF REFERENCE DESIGNATION CHARACTERS TO BE APPLIED PER ND-1002019. CHARACTER HEIGHT 1/8 UNLESS OTHERWISE SPECIFIED.
23. 1/2 INCH CLEARANCE TO BE PROVIDED FROM INSIDE OF REAR PANEL FOR THESE HOLES.
24. ONLY THE ITEM LISTED ON THIS DRAWING AND IDENTIFIED BY SUPPLIERS NAME, ADDRESS, AND PART NUMBER HAS BEEN TESTED AND APPROVED BY NASA FOR USE IN THE OPTICS INERTIAL TEST SET. A SUBSTITUDE ITEM SHALL NOT BE USED WITHOUT PRIOR TESTING AND APPROVAL BY NASA.







REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
|---|---|---|---|---|---|
| A | E-2<br>B-8<br>C-3<br>C-4<br>C-8<br>C-6<br>C-7<br>D-6<br>E-8<br>F-6 | REMOVE [illegible] AND HOLDER<br>ADD NOTE 19<br>CHGE DIMENSIONS 1.48 WAS 1.48<br>SAME .34 WAS .31<br>CHGE NOTE 17<br>ADD ± 1/16 TOLERANCE<br>CHANGE<br>NOTES | | | |
| B | G-3<br>F-3<br>E-3<br>B-3<br>B-4<br>C-5<br>H-8<br>G-8<br>F-8<br>F-8<br>E-8<br>C-5 | AC P/N 8595000-080 REMOVED FROM POWER CONN DESIG - NASA P/N REPLACED GREMAR P/N 5632 B ON INPUT CONN. J1 & J2 DESIG ADDED TO CONN. INFO VENT. NOTE WAS "8 ROWS OF 8 HOLES 3/8 DIA 4 PLACES TOP & BOTTOM."<br>.188 DIA HOLES & .312 DIA HOLES AND RELATED INFO ADDED REPLACES MTG ARRGT OF FASTENERS (AC P/N 8595512-001 4 REQ) AND HANDLES (AC P/N 8595498-008 2 PLACES) AND THEIR RELATED INFO.<br>SLIDE MTG NUTS WERE AC P/N 8599692-016<br>REQ'S:<br>APPROX ADDED TO NET WT<br>±5 CPS TOL ADDED TO POWER REQ<br>FIN P513 OF MIL-F-14072 ADDED TO FINISH<br>INPUT IMPED WAS 1 MEGOHM ±3%<br>AC P/N 8599369, 8599363 & 8537049 REMOVED FROM KNOB REQ'T. FLAT BLACK COLOR WAS BLACK<br>INSPEC & TEST DATA COPY REQ'T ADDED TO MANUAL SUPP'T REQ'TS.<br>WAS "19.00 & 16 7/8 ----- WITHIN .010 AT ASSY".<br>ND 1002019 WAS ES-2870<br>REVISED (SIMILAR INFO)<br>REMOVED WAS "FASTENER ST OFF SHALL BE FLUSH WITH REAR SURF OF THE FRONT PANEL"<br>"THE SIDEWALL---EQUIP'T" ADDED<br>1.797±.020 WAS 1.547<br>3.625±.020 WAS 3.625 | DO 51403 | 2 APR 63 | |
| B1 | | CHANGE IN ACCORDANCE WITH MXC-186734. | MXC-186734 | 24 MAY 63 | JHH<br>H.L.F |
| C | | CHANGE IN ACCORDANCE WITH MXC 187966 PER TDRR 02720 | | 12 JUL 63 | C.A.M.<br>CAF |
| D | — | CHANGE IN ACCORDANCE WITH MXC 191977 PER TDRR 08201 | — | 11 NOV 63 | EL |
| E | | REVISED & UPGRADED TO CLASS A PER TDRR 21083 | | 27 JUL 65 | HTO<br>RWH |

| | | |
|---|---|---|
| 1900334-0 | 1900104 | |
| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
| APPLICATION | | |

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

| FRACTIONS | DECIMALS | ANGLES |
|---|---|---|
| +1/32<br>-1/32 | ±.000 +.005 -.005<br>±.00 +.02 -.02 | +2°<br>-2° |

DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN L. COOPER DATE 22 JAN 63
CHECKED Pizzida 23 JAN 63
APPROVAL 5 APR 63
APPROVAL 5 APR 63
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

GALVANOMETER

SOURCE CONTROL DRAWING

CODE IDENT NO 99974
SIZE E
1900062
SCALE 1:4
SHEET —

1900062

E

REQUIREMENTS:

COLUMN CAPACITY: 12 DIGIT-COLUMN - COLUMN 8, 9, 10, 11 AND 12 SHALL BE 10 LINE DECIMAL. COLUMNS 1, 2, 3, 4, 5, 6 AND 7 SHALL BE 4-LINE DECIMAL FOR USE WITH 8421 AND 2421 CODES. THE 10 LINE DECIMAL INPUT TO COLUMNS 8, 9, 10, 11 AND 12 SHALL BE PROVIDED BY CONTACT CLOSURES.

THE LOGIC "0" VOLTAGE LEVELS SHALL BE PROVIDED FROM THE PRINTER AND SHALL BE AVAILABLE VIA CONNECTOR P1

LOGIC "1" VOLTAGE LEVELS SHALL BE PROVIDED AS PRINTER SIGNAL GROUND AND BE AVAILABLE VIA CONNECTOR P2.

PRINT BARS SHALL BE INSTALLED AS FOLLOWS:
COLUMNS 1-2-3-4-5-6-8-9-10-11-12 SHALL CONTAIN THE NUMERALS 0 1 2 3 4 5 6 7 8 9. NO NUMERAL SHALL BE PRINTED WHEN COLUMN IS SUPPRESSED. COLUMN 7 SHALL CONTAIN THE CHARACTERS + - F T R AC * Ω • #. NO CHARACTER SHALL BE PRINTED WHEN COLUMN IS SUPPRESSED.

PRINTING RATE: ZERO TO 3 LINES PER SECOND.
ACCURACY: IDENTICAL TO DATA INPUT SOURCES.

INPUT CODE:
WITH APPROXIMATELY 2 MEGOHMS SERIES SOURCE RESISTANCE PER LINE, BINARY "0", -12 TO -50 SOURCE VOLTS AND BINARY "1", 0 TO +50 SOURCE VOLTS. WITH APPROXIMATELY 100K OHMS SERIES SOURCE RESISTANCE PER LINE, BINARY "0" IS -8 TO -50 SOURCE VOLTS AND BINARY "1" IS 0 TO +50 SOURCE VOLTS.

CONTROL VOLTAGES:
BINARY "0", -12 TO -50 VOLTS.
BINARY "1", 0 TO +50 VOLTS.

INPUT RESISTANCE:
10 MEGOHMS FOR NEGATIVE INPUTS, 200K OHMS FOR POSITIVE INPUTS (4-LINE AND 10-LINE CODE MODULES).

SIGNAL INPUTS, AND CHASSIS MUST BE ELECTRICALLY ISOLATED FROM EACH OTHER, DELETE THE 0.1 uF 400V CAPACITOR C 126.

THE TEN-LINE INPUT CODE MODULES SHALL BE MODIFIED AS FOLLOWS: THE R301, CONNECTED TO PIN 11 OF P301, SHALL HAVE A VALUE OF 22K 1/4 W INSTEAD OF 220K 1/4 W

FRONT PANEL FINISH - APPLY FINISH P513 OF SPECIFICATION MIL-F-14072. PRIME AND FINISH COATS TO BE APPLIED TO PANEL FRONT AND EDGES ONLY. APPLY 2 COATS OF TT-E-529A CLASS B ENAMEL, SEMI-GLOSS, LIGHT GRAY, COLOR 26440 OF FED STD -595.

1 CHARACTERS PER ND-1002122 SILK SCREEN PER ND 1002019 USING ENAMEL, SEMI-GLOSS INSTRUMENT BLACK, COLOR 514 OF ANA 157. CENTRALIZE AS SHOWN. CHARACTER HEIGHT 1/8 EXCEPT WHERE OTHERWISE SPECIFIED.

THE SUPPLIER'S NAME, ADDRESS AND PART NUMBER SHALL BE PLACED ON THE OUTSIDE SURFACE OF THE REAR PLATE PER ND-1002019 THIS INFORMATION SHALL NOT APPEAR ON THE FRONT PANEL.

THE EQUIPMENT SHALL PASS ALL TESTS CALLED OUT IN ATP-1900063.

TWO COPIES OF THE SERVICE MANUAL CONTAINING A SPARE PARTS LIST, SCHEMATIC DIAGRAM, OPERATING INSTRUCTIONS, MAINTENANCE INSTRUCTIONS AND CALIBRATION INSTRUCTIONS SHALL BE SUPPLIED WITH EACH UNIT. ALSO, ONE COPY OF THE INSPECTION TEST DATA SHALL BE SUPPLIED WITH EACH UNIT.

COLOR CONTROL:
MANUAL: TWO-POSITION LEVER SELECTS RED OR BLACK PRINT-OUT.
REMOTE CONTROL: RED, BINARY "1" OR OPEN CIRCUIT; BLACK, BINARY "0". APPROXIMATELY 2 MEGOHMS PRINTER INPUT RESISTANCE.

COLUMN SUPPRESSION:
SINGLE LINE GROUNDED FOR EACH COLUMN SUPPRESSED (3 MA MAXIMUM, +10 VOLTS OPEN CIRCUIT).

PRINT COMMAND:
CHANGE FROM BINARY "1" TO BINARY "0". BINARY "0", MUST BE MAINTAINED 100 MS MINIMUM AFTER PRINT COMMAND; BINARY "1", MUST BE MAINTAINED 15 MS MINIMUM BEFORE NEXT PRINT COMMAND.

INHIBIT RESET COMMAND FROM PRINTER:
OCCURS WITHIN 50 MS AFTER PRINT COMMAND; 200 MS MAXIMUM DURATION.

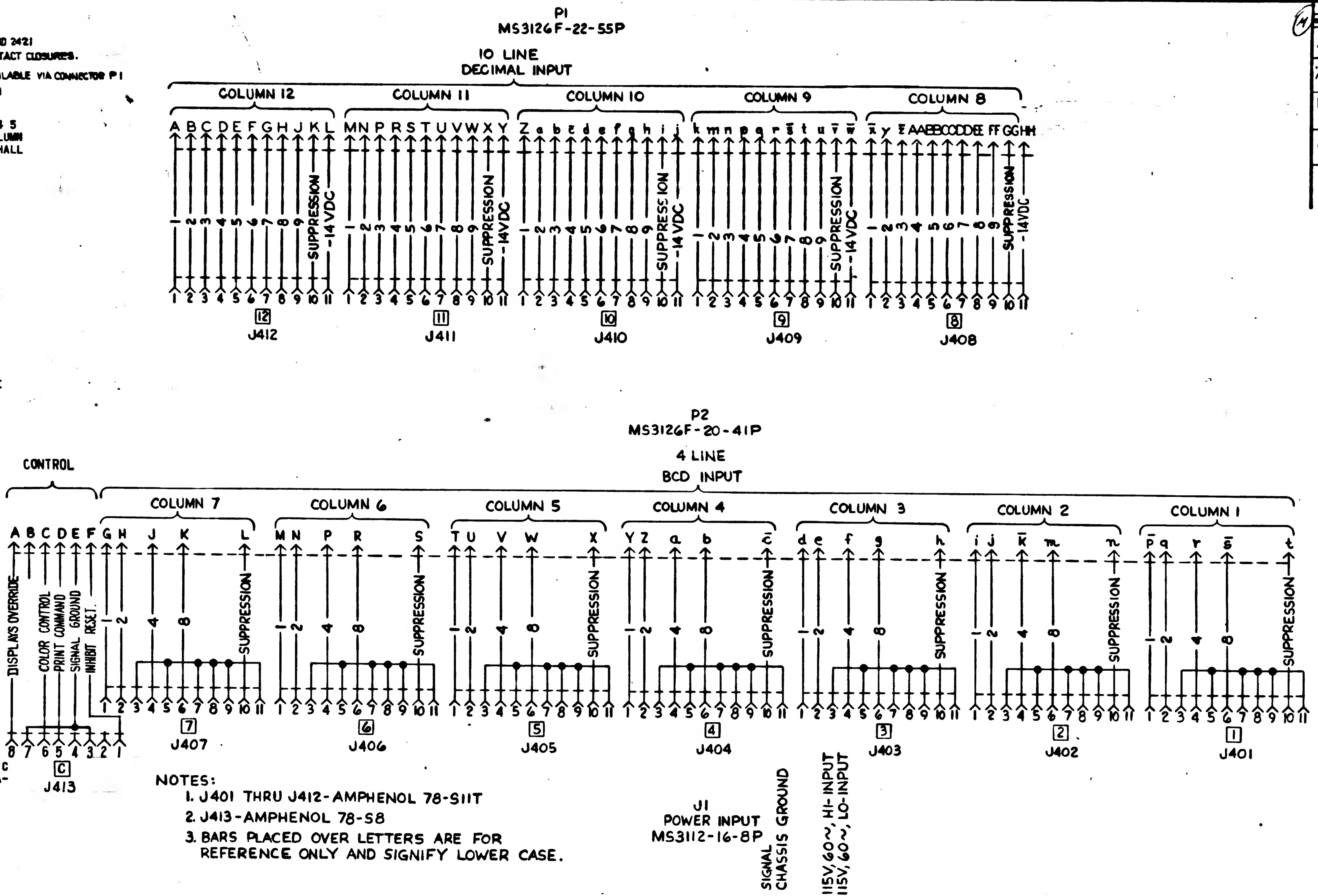
INTERNAL GROUND:
PRINTER SHALL OPERATE NORMALLY WITH THE CIRCUIT GROUND BIASED FROM 0 TO ± 100 VOLTS ABOVE THE CHASSIS.

PRINTING RIBBON:
7/16" TWO-COLOR ADDING MACHINE RIBBON, RED-BLACK.
PAPER REQUIREMENTS:
STANDARD 2 1/4" ROLL TAPE OR FAN-FOLDED TAPE.

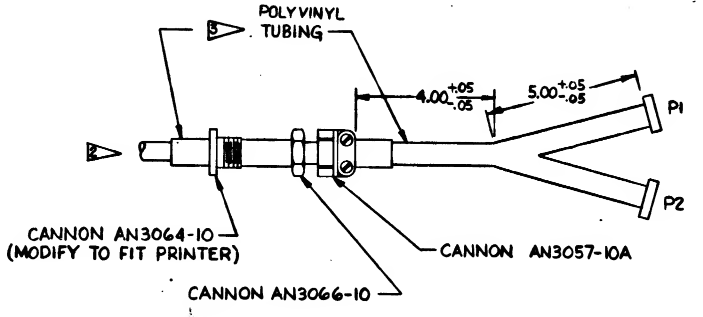
POWER REQUIREMENTS:
115V RMS ±10%, 60±5 CPS, 45 WATTS.

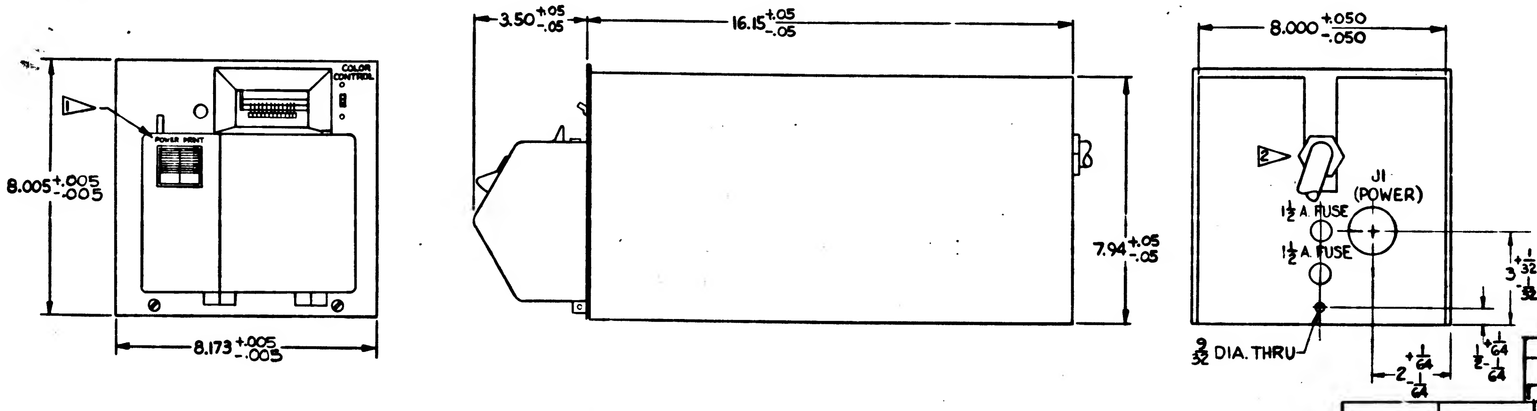
3 TUBING POLYVINYL:
PER MIL-I-631 D, TYPE F, FORM U, GRADE C, CLASS I, CATEGORY 1.

DATA SOURCE: MODEL 1453
BECKMAN INSTRUMENTS, INC.,
BERKELEY DIVISION,
RICHMOND, CALIFORNIA



NOTES:
1. J401 THRU J412-AMPHENOL 78-S11T
2. J413-AMPHENOL 78-S8
3. BARS PLACED OVER LETTERS ARE FOR REFERENCE ONLY AND SIGNIFY LOWER CASE.





**FOR INFORMATION ONLY**
CLASS B RELEASE TDR No. C0495 DATE 24 Sep 63

| SYM | ZONE | REVISIONS DESCRIPTION | CHG NO. | DATE | APPD. |
|---|---|---|---|---|---|
| A |  | CHANGE IN ACCORDANCE WITH MXC 186153 | MXC 186153 | 2 MAY 63 | R.N.T. / P. Reinke |
| A1 |  | CHANGE IN ACCORDANCE WITH MXC 187052 | MXC 187052 | 11 JUN 63 | J.B. / RH |
| B |  | CHANGE IN ACCORDANCE WITH MXC 187525 | MXC 187525 | 27 JUNE 63 | J.J.J. |
| C |  | CHANGE IN ACCORDANCE WITH MXC 188473 PER TDRR 03727 | 5 Oct 63 WK | 5 AUG 63 | L.A.M.D. / RLW |

| QUANTITY REQUIRED |  |  | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|

LIST OF MATERIALS OR PARTS LIST

| NEXT ASSY | USED ON |
|---|---|
| 1900054-011 |  |

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN 5K44269
DRAWN E. Miller 8 APR 63 DATE
CHECKED Hogue 10 APR 63
APPROVAL 10 APR 63
APPROVAL 11 APR 63
NASA APPROVAL 4/24/63
MIT APPROVAL 24 Apr 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

PRINTER

CODE IDENT NO.
SIZE E
1900063
SCALE —
SHEET

C 1900063

INCHES
PHOTOGRAPHIC SCALE ONLY

REQUIREMENTS:

COLUMN CAPACITY: 12 DIGIT-COLUMN - COLUMN 8, 9, 10, 11 AND 12 SHALL BE 10 LINE DECIMAL. COLUMNS 1, 2, 3, 4, 5, 6 AND 7 SHALL BE 4-LINE DECIMAL FOR USE WITH 8421 AND 2421 CODES. THE 10 LINE DECIMAL INPUT TO COLUMNS 8, 9, 10, 11 AND 12 SHALL BE PROVIDED BY CONTACT CLOSURES.

THE LOGIC 0 VOLTAGE LEVELS SHALL BE PROVIDED FROM THE PRINTER AND SHALL BE AVAILABLE VIA CONNECTOR P1

LOGIC "1" VOLTAGE LEVELS SHALL BE PROVIDED AS PRINTER SIGNAL GROUND AND BE AVAILABLE VIA CONNECTOR P2.

PRINT BARS SHALL BE INSTALLED AS FOLLOWS:
COLUMNS 1-2-3-4-5-6-8-9-10-11-12 SHALL CONTAIN THE NUMERALS 0 1 2 3 4 5 6 7 8 9. NO NUMERAL SHALL BE PRINTED WHEN COLUMN IS SUPPRESSED. COLUMN 7 SHALL CONTAIN THE CHARACTERS + - F T R AC *Ω • #. NO CHARACTER SHALL BE PRINTED WHEN COLUMN IS SUPPRESSED.

PRINTING RATE: ZERO TO 3 LINES PER SECOND.
ACCURACY: IDENTICAL TO DATA INPUT SOURCES.

INPUT CODE:
WITH APPROXIMATELY 2 MEGOHMS SERIES SOURCE RESISTANCE PER LINE, BINARY "0", -12 TO -50 SOURCE VOLTS AND BINARY "1", 0 TO +50 SOURCE VOLTS. WITH APPROXIMATELY 100K OHMS SERIES SOURCE RESISTANCE PER LINE, BINARY "0" IS -8 TO -50 SOURCE VOLTS AND BINARY "1" IS 0 TO +50 SOURCE VOLTS.

CONTROL VOLTAGES:
BINARY "0", -12 TO -50 VOLTS.
BINARY "1", 0 TO +50 VOLTS.

INPUT RESISTANCE:
10 MEGOHMS FOR NEGATIVE INPUTS, 200K OHMS FOR POSITIVE INPUTS (4-LINE AND 10-LINE CODE MODULES).

SIGNAL INPUTS , AND CHASSIS MUST BE ELECTRICALLY ISOLATED FROM EACH OTHER, DELETE THE 0.1 uF 400V CAPACITOR C 126.

THE TEN-LINE INPUT CODE MODULES SHALL BE MODIFIED AS FOLLOWS: THE R301, CONNECTED TO PIN 11 OF P301, SHALL HAVE A VALUE OF 22K 1/4 W INSTEAD OF 220K 1/4 W

FRONT PANEL FINISH - APPLY FINISH P513 OF SPECIFICATION MIL-F-14072. PRIME AND FINISH COATS TO BE APPLIED TO PANEL FRONT AND EDGES ONLY. APPLY 2 COATS OF TT-E-529A CLASS B ENAMEL, SEMI-GLOSS, LIGHT GRAY, COLOR 26440 OF FED STD -595.

▷ CHARACTERS PER ND-1002122 SILK SCREEN PER ND 100219 USING ENAMEL, SEMI-GLOSS INSTRUMENT BLACK, COLOR 514 OF ANA 157. CENTRALIZE AS SHOWN. CHARACTER HEIGHT 1/8 EXCEPT WHERE OTHERWISE SPECIFIED.

THE SUPPLIER'S NAME, ADDRESS AND PART NUMBER SHALL BE PLACED ON THE OUTSIDE SURFACE OF THE REAR PLATE PER ND-1002019 THIS INFORMATION SHALL NOT APPEAR ON THE FRONT PANEL.

THE EQUIPMENT SHALL PASS ALL TESTS CALLED OUT IN ATP-1900063.

TWO COPIES OF THE SERVICE MANUAL CONTAINING A SPARE PARTS LIST, SCHEMATIC DIAGRAM, OPERATING INSTRUCTIONS, MAINTENANCE INSTRUCTIONS AND CALIBRATION INSTRUCTIONS SHALL BE SUPPLIED WITH EACH UNIT. ALSO, ONE COPY OF THE INSPECTION TEST DATA SHALL BE SUPPLIED WITH EACH UNIT.

COLOR CONTROL:
MANUAL: TWO-POSITION LEVER SELECTS RED OR BLACK PRINT-OUT.
REMOTE CONTROL: RED, BINARY "1" OR OPEN CIRCUIT; BLACK, BINARY "0". APPROXIMATELY 2 MEGOHMS PRINTER INPUT RESISTANCE.

COLUMN SUPPRESSION:
SINGLE LINE GROUNDED FOR EACH COLUMN SUPPRESSED (3 MA MAXIMUM, +10 VOLTS OPEN CIRCUIT).

PRINT COMMAND:
CHANGE FROM BINARY "1" TO BINARY "0". BINARY "0", MUST BE MAINTAINED 100 MS MINIMUM AFTER PRINT COMMAND; BINARY "1", MUST BE MAINTAINED 15 MS MINIMUM BEFORE NEXT PRINT COMMAND.

INHIBIT RESET COMMAND FROM PRINTER:
OCCURS WITHIN 50 MS AFTER PRINT COMMAND; 200 MS MAXIMUM DURATION.

INTERNAL GROUND:
PRINTER SHALL OPERATE NORMALLY WITH THE CIRCUIT GROUND BIASED FROM 0 TO ± 100 VOLTS ABOVE THE CHASSIS.

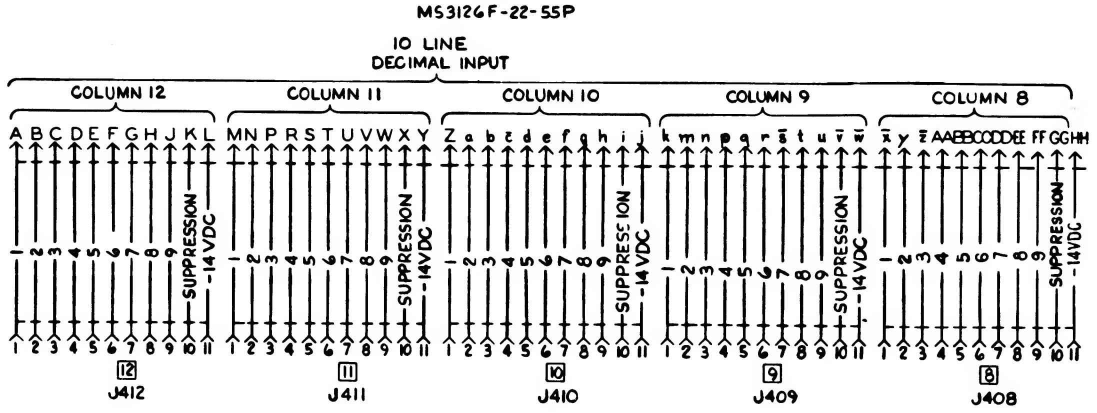
PRINTING RIBBON:
7/16" TWO-COLOR ADDING MACHINE RIBBON, RED-BLACK.
PAPER REQUIREMENTS:
STANDARD 2 1/4" ROLL TAPE OR FAN-FOLDED TAPE.

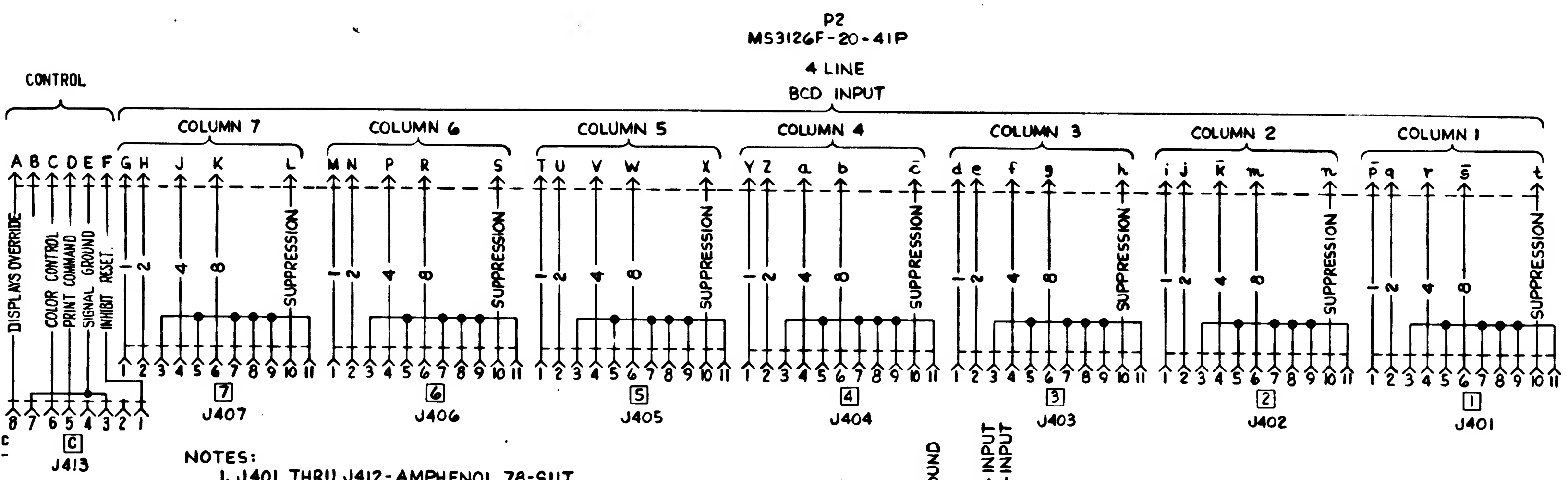
POWER REQUIREMENTS:
115V RMS ±10%, 60± 5 CPS, 45 WATTS.

▷ TUBING POLY VINYL:
PER MIL-I-631D, TYPE F, FORM U, GRADE C, CLASS I, CATEGORY I.

▷ THE PROCUREMENT SPECIFICATION APPLIES ONLY WHEN THE PRINTER IS SOLD INDEPENDENTLY FROM A HIGHER ASSEMBLY AND IS SOLD TO A GOVERNMENT AGENCY.

DATA SOURCE: MODEL 1453
BECKMAN INSTRUMENTS, INC.,
BERKELEY DIVISION,
RICHMOND, CALIFORNIA

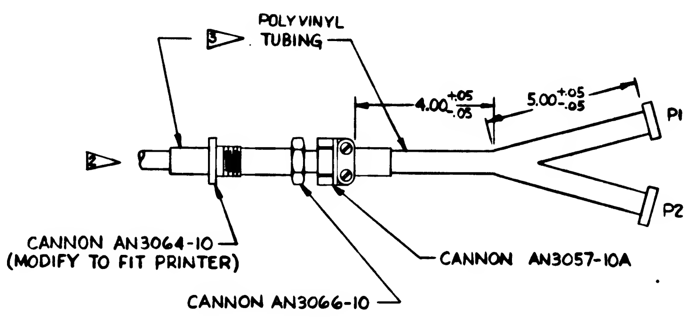


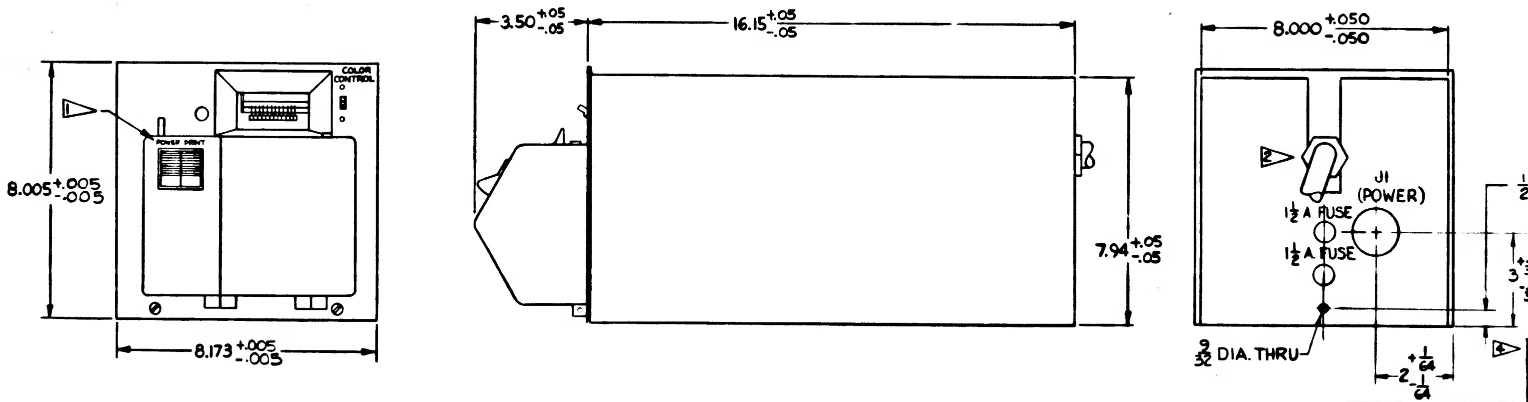


J1
POWER INPUT
MS3112-16-8P

| PIN | |
|---|---|
| A | SIGNAL |
| B | CHASSIS GROUND |
| C | |
| D | 115V, 60~, HI-INPUT |
| E | 115V, 60~, LO-INPUT |
| F | |
| G | |
| H | |

NOTES:
1. J401 THRU J412-AMPHENOL 78-S11T
2. J413-AMPHENOL 78-58
3. BARS PLACED OVER LETTERS ARE FOR REFERENCE ONLY AND SIGNIFY LOWER CASE.





FOR INFORMATION ONLY
CLASS B RELEASE TDR No. C0499 DATE 24 Apr 63

REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
|---|---|---|---|---|---|
| A | | CHANGE IN ACCORDANCE WITH MXC 186153 | MXC 186153 | 2 MAY 63 | |
| A1 | | CHANGE IN ACCORDANCE WITH MXC 187052 | MXC 187052 | 11 JUN 63 | |
| B | | CHANGE IN ACCORDANCE WITH MXC 187525 | MXC 187525 | 27 JUNE 63 | |
| C | | CHANGE IN ACCORDANCE WITH MXC 188473 PER TDRR 03727 | WK | 5 AUG 63 | AMD<br>RLW |
| D | | CHANGE IN ACCORDANCE WITH CM 196101<br>REVISED PER TDR 08212 | | 20 MAR 64 | GG<br>EI |

REPLACED WITH CHANGE

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | X | | 1 | PS1900063 | PROCUREMENT SPECIFICATION |
| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| QUANTITY REQUIRED | | | | | LIST OF MATERIALS OR PARTS LIST | | |

1900054-011
NEXT ASSY | USED ON
APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN SK44269
DRAWN E. Miller 8 APR 63 DATE
CHECKED Hogue 10 APR 63
APPROVAL 10 APR 63
APPROVAL 11 APR 63
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

PRINTER

CODE IDENT NO.
SIZE E
1900063
SCALE —
SHEET

REQUIREMENTS:

COLUMN CAPACITY: 12 DIGIT-COLUMN - COLUMN 8, 9, 10, 11 AND 12 SHALL BE 10 LINE DECIMAL. COLUMNS 1, 2, 3, 4, 5, 6 AND 7 SHALL BE 4-LINE DECIMAL FOR USE WITH 8421 AND 2421 CODES. THE 10 LINE DECIMAL INPUT TO COLUMNS 8, 9, 10, 11 AND 12 SHALL BE PROVIDED BY CONTACT CLOSURES.

THE LOGIC "0" VOLTAGE LEVELS SHALL BE PROVIDED FROM THE PRINTER AND SHALL BE AVAILABLE VIA CONNECTOR P1

LOGIC "1" VOLTAGE LEVELS SHALL BE PROVIDED AS PRINTER SIGNAL GROUND AND BE AVAILABLE VIA CONNECTOR P2.

PRINT BARS SHALL BE INSTALLED AS FOLLOWS:
COLUMNS 1-2-3-4-5-6-8-9-10-11-12 SHALL CONTAIN THE NUMERALS 0 1 2 3 4 5 6 7 8 9. NO NUMERAL SHALL BE PRINTED WHEN COLUMN IS SUPPRESSED. COLUMN 7 SHALL CONTAIN THE CHARACTERS + - F T R AC * Ω • #. NO CHARACTER SHALL BE PRINTED WHEN COLUMN IS SUPPRESSED.

PRINTING RATE: ZERO TO 3 LINES PER SECOND.
ACCURACY: IDENTICAL TO DATA INPUT SOURCES.

INPUT CODE:
WITH APPROXIMATELY 2 MEGOHMS SERIES SOURCE RESISTANCE PER LINE, BINARY "0", -12 TO -50 SOURCE VOLTS AND BINARY "1", 0 TO +50 SOURCE VOLTS. WITH APPROXIMATELY 100K OHMS SERIES SOURCE RESISTANCE PER LINE, BINARY "0" IS -8 TO -50 SOURCE VOLTS AND BINARY "1" IS 0 TO +50 SOURCE VOLTS.

CONTROL VOLTAGES:
BINARY "0", -12 TO -50 VOLTS.
BINARY "1", 0 TO +50 VOLTS.

INPUT RESISTANCE:
10 MEGOHMS FOR NEGATIVE INPUTS, 200K OHMS FOR POSITIVE INPUTS (4-LINE AND 10-LINE CODE MODULES).

SIGNAL INPUTS • , AND CHASSIS MUST BE ELECTRICALLY ISOLATED FROM EACH OTHER, DELETE THE 0.1 μF 400V CAPACITOR C 126.

THE TEN-LINE INPUT CODE MODULES SHALL BE MODIFIED AS FOLLOWS: THE R301, CONNECTED TO PIN 11 OF P301, SHALL HAVE A VALUE OF 22K 1/4 W INSTEAD OF 220K 1/4 W

FRONT PANEL FINISH - APPLY FINISH P513 OF SPECIFICATION MIL-F-14072. PRIME AND FINISH COATS TO BE APPLIED TO PANEL FRONT AND EDGES ONLY. APPLY 2 COATS OF TT-E-529A CLASS B ENAMEL, SEMI-GLOSS, LIGHT GRAY, COLOR 26440 OF FED STD -595.

1 CHARACTERS PER ND-1002122 SILK SCREEN PER ND 100219 USING ENAMEL, SEMI-GLOSS INSTRUMENT BLACK, COLOR 514 OF ANA 157. CENTRALIZE AS SHOWN. CHARACTER HEIGHT 1/8 EXCEPT WHERE OTHERWISE SPECIFIED.

THE SUPPLIER'S NAME, ADDRESS AND PART NUMBER SHALL BE PLACED ON THE OUTSIDE SURFACE OF THE REAR PLATE PER ND-1002019 THIS INFORMATION SHALL NOT APPEAR ON THE FRONT PANEL.

THE EQUIPMENT SHALL PASS ALL TESTS CALLED OUT IN ATP-1900063.

TWO COPIES OF THE SERVICE MANUAL CONTAINING A SPARE PARTS LIST, SCHEMATIC DIAGRAM, OPERATING INSTRUCTIONS, MAINTENANCE INSTRUCTIONS AND CALIBRATION INSTRUCTIONS SHALL BE SUPPLIED WITH EACH UNIT. ALSO, ONE COPY OF THE INSPECTION TEST DATA SHALL BE SUPPLIED WITH EACH UNIT.

COLOR CONTROL:
MANUAL: TWO-POSITION LEVER SELECTS RED OR BLACK PRINT-OUT.
REMOTE CONTROL: RED, BINARY "1" OR OPEN CIRCUIT; BLACK, BINARY "0". APPROXIMATELY 2 MEGOHMS PRINTER INPUT RESISTANCE.

COLUMN SUPPRESSION:
SINGLE LINE GROUNDED FOR EACH COLUMN SUPPRESSED (3 MA MAXIMUM, +10 VOLTS OPEN CIRCUIT).

PRINT COMMAND:
CHANGE FROM BINARY "1" TO BINARY "0". BINARY "0", MUST BE MAINTAINED 100 MS MINIMUM AFTER PRINT COMMAND; BINARY "1", MUST BE MAINTAINED 15 MS MINIMUM BEFORE NEXT PRINT COMMAND.

INHIBIT RESET COMMAND FROM PRINTER:
OCCURS WITHIN 50 MS AFTER PRINT COMMAND; 200 MS MAXIMUM DURATION.

INTERNAL GROUND:
PRINTER SHALL OPERATE NORMALLY WITH THE CIRCUIT GROUND BIASED FROM 0 TO ± 100 VOLTS ABOVE THE CHASSIS.

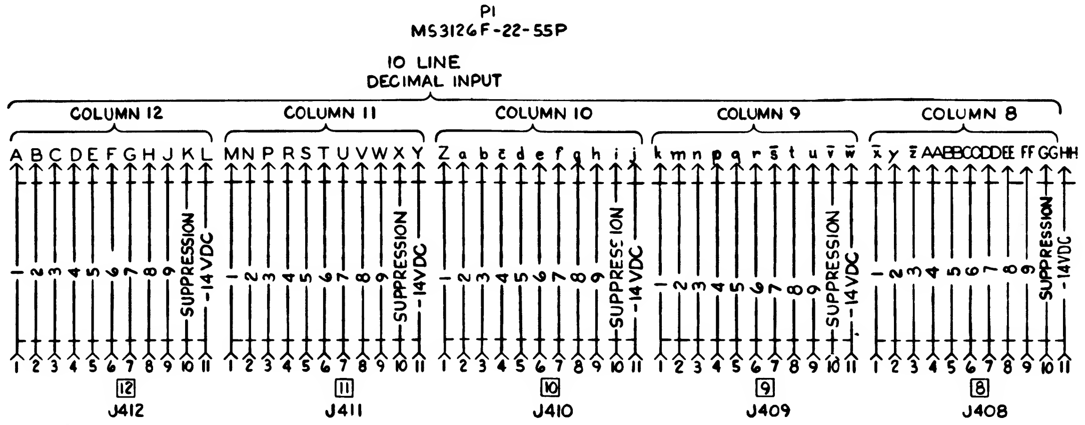
PRINTING RIBBON:
7/16" TWO-COLOR ADDING MACHINE RIBBON, RED-BLACK.
PAPER REQUIREMENTS:
STANDARD 2 1/4" ROLL TAPE OR FAN-FOLDED TAPE.

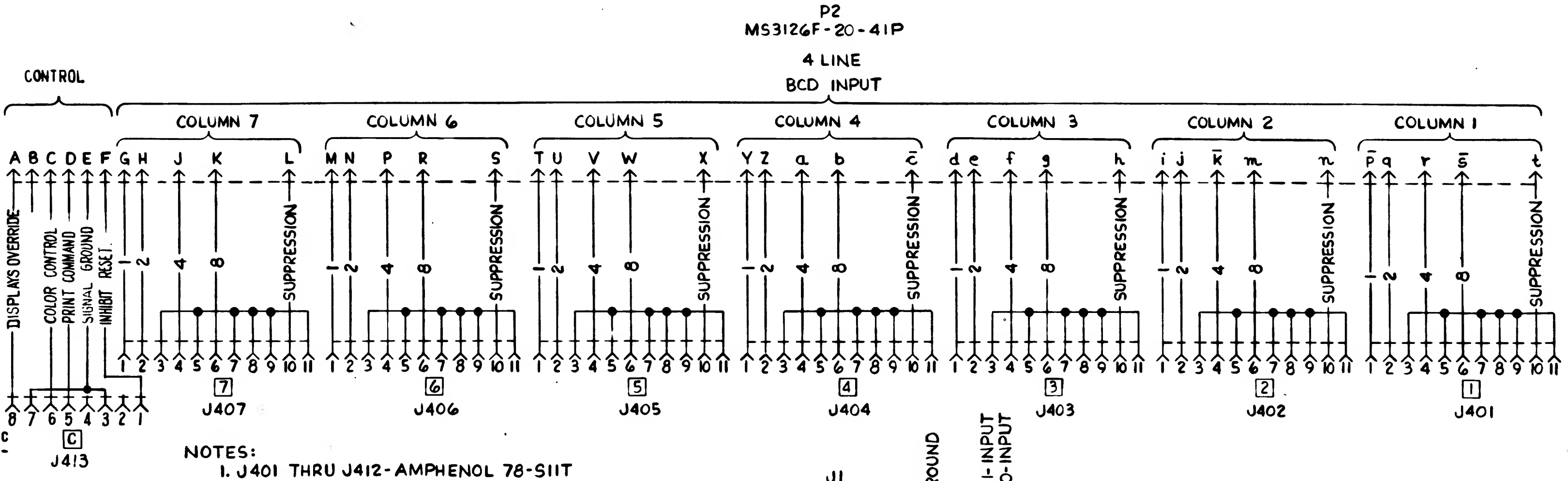
POWER REQUIREMENTS:
115V RMS ±10%, 60 ± 5 CPS, 45 WATTS.

3 TUBING POLYVINYL:
PER MIL-I-631D, TYPE F, FORM U, GRADE C, CLASS I, CATEGORY 1.

4 THE PROCUREMENT SPECIFICATION APPLIES ONLY WHEN THE PRINTER IS SOLD INDEPENDENTLY FROM A HIGHER ASSEMBLY AND IS SOLD TO A GOVERNMENT AGENCY.

DATA SOURCE: MODEL 1453
BECKMAN INSTRUMENTS, INC.,
BERKELEY DIVISION,
RICHMOND, CALIFORNIA

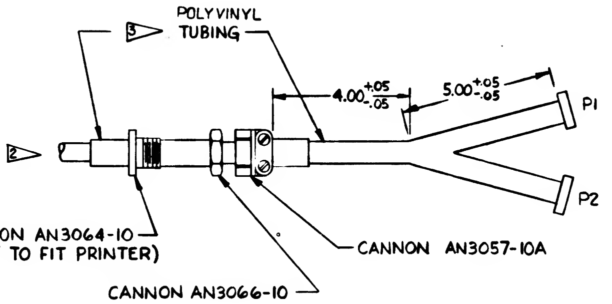




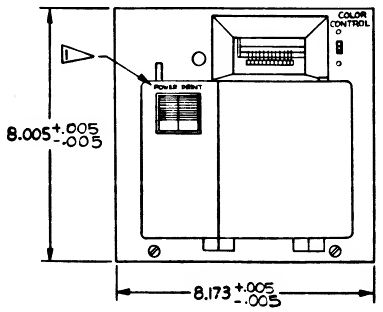
NOTES:
1. J401 THRU J412-AMPHENOL 78-S11T
2. J413-AMPHENOL 78-S8
3. BARS PLACED OVER LETTERS ARE FOR REFERENCE ONLY AND SIGNIFY LOWER CASE.

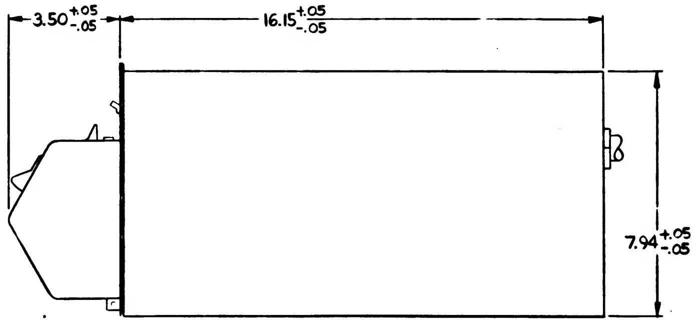
J1
POWER INPUT
MS3112-16-8P

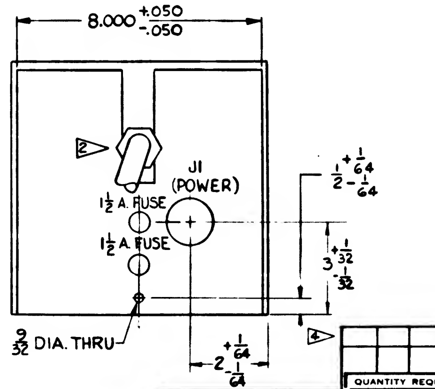
| PIN | |
|---|---|
| A | SIGNAL |
| B | CHASSIS GROUND |
| C | |
| D | 115V, 60~, HI-INPUT |
| E | 115V, 60~, LO-INPUT |
| F | |
| G | |
| H | |



FOR INFORMATION ONLY
CLASS B RELEASE TDR No. 00498 DATE 24 Apr 63







| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| A | | CHANGE IN ACCORDANCE WITH MXC 186153 | MXC 186153 | 2 MAY 63 | R.W.T. E. Remde |
| A1 | | CHANGE IN ACCORDANCE WITH MXC 87052 | MXC 187052 | 1 JUN 63 | RW |
| B | | CHANGE IN ACCORDANCE WITH MXC 187525 | MXC 187525 | 27 JUNE 63 | |
| C | | CHANGE IN ACCORDANCE WITH MXC 188473 PER TDRR 03727 | [illegible] WR | 5 AUG 63 | AMD. RLW |
| D | | CHANGE IN ACCORDANCE WITH CM 196101<br>REVISED PER TDR 0822 | | 20 MAR 64 | GG |
| E | | REPLACED WITH CHANGE BY REV. F PER TDRR 20371 | | 1 JUL 65 | |

Ⓔ REPLACED WITH CHANGE BY REV Ⓕ

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | X | | 1 | PS1900063 | PROCUREMENT SPECIFICATION |
| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| QUANTITY REQUIRED | | | | | LIST OF MATERIALS OR PARTS LIST | | |

| | |
|---|---|
| 1900054-011 | |
| NEXT ASSY | USED ON |
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN SK 44269
DRAWN E. Miller 8 APR 63 DATE
CHECKED Hogue 10 APR 63
APPROVAL 10 APR 63
APPROVAL 11 APR 63
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

PRINTER

CODE IDENT NO.
SIZE E
1900063
SCALE —
SHEET

REQUIREMENTS:
COLUMN CAPACITY: 12 DIGIT-COLUMNS
COLUMNS 9, 10, 11 AND 12 SHALL BE 10-LINE DECIMAL, REMAINDER OF COLUMNS SHALL BE 8421 AND 2421 CODE. THE 10-LINE DECIMAL INPUT TO COLUMNS 9, 10, 11 AND 12 SHALL BE PROVIDED BY CONTACT CLOSURES. THE LOGIC "0" AND LOGIC "1" VOLTAGE LEVELS SHALL BE PROVIDED FROM THE PRINTER AND SHALL BE AVAILABLE VIA CONNECTOR P1.
PRINT BARS SHALL BE INSTALLED AS FOLLOWS:
COLUMNS 1-2-3-4-5-6-7-8-10-11-12 SHALL CONTAIN THE NUMERALS 0 1 2 3 4 5 6 7 8 9. NO NUMERAL SHALL BE PRINTED WHEN COLUMN IS SUPPRESSED. COLUMN 9 SHALL CONTAIN THE CHARACTERS + - F T R AC * Ω • #. NO CHARACTER SHALL BE PRINTED WHEN COLUMN IS SUPPRESSED.

PRINTING RATE: ZERO TO 3 LINES PER SECOND.
ACCURACY: IDENTICAL TO DATA INPUT SOURCES.

INPUT CODE:
WITH APPROXIMATELY 2 MEGOHMS SERIES SOURCE RESISTANCE PER LINE, BINARY "0", -12 TO -50 SOURCE VOLTS AND BINARY "1", 0 TO +50 SOURCE VOLTS. WITH APPROXIMATELY 100K OHMS SERIES SOURCE RESISTANCE PER LINE, BINARY "0" IS -8 TO -50 SOURCE VOLTS AND BINARY "1" IS 0 TO +50 SOURCE VOLTS.

CONTROL VOLTAGES:
BINARY "0", -12 TO -50 VOLTS.
BINARY "1", 0 TO +50 VOLTS.

INPUT RESISTANCE:
10 MEGOHMS FOR NEGATIVE INPUTS, 200K OHMS FOR POSITIVE INPUTS (4-LINE AND 10-LINE CODE MODULES).

INPUTS, POWER SOURCE, AND CHASSIS MUST BE ELECTRICALLY ISOLATED FROM EACH OTHER, AND FROM THE FRAME. DELETE THE 0.1 uF 400V CAPACITOR C 126.

THE TEN-LINE INPUT CODE MODULES SHALL BE MODIFIED AS FOLLOWS: THE R301, CONNECTED TO PIN 11 OF P301, SHALL HAVE A VALUE OF 22K 1/4 W INSTEAD OF 220K 1/4 W

FRONT PANEL FINISH - APPLY FINISH P513 OF SPECIFICATION MIL-F-14072. PRIME AND FINISH COATS TO BE APPLIED TO PANEL FRONT AND EDGES ONLY. APPLY 2 COATS OF TT-E-529A CLASS B ENAMEL, SEMI-GLOSS, LIGHT GRAY, COLOR 26440 OF FED STD -595. REAR FACE OF FRONT PANEL TO BE PROTECTED FROM CORROSION BY CONDUCTIVE FINISH PER MIL-C-5541.

▷1 CHARACTERS (FUTURA DEMIBOLD). SILK SCREEN PER ND 100219 USING ENAMEL, SEMI-GLOSS INSTRUMENT BLACK, COLOR 514 OF ANA 157. CENTRALIZE AS SHOWN. CHARACTER HEIGHT 1/8 EXCEPT WHERE OTHERWISE SPECIFIED.

THE SUPPLIER'S NAME, ADDRESS AND PART NUMBER SHALL BE PLACED ON THE OUTSIDE SURFACE OF THE REAR PLATE. THIS INFORMATION SHALL NOT APPEAR ON THE FRONT PANEL.

THE EQUIPMENT SHALL PASS ALL TESTS CALLED OUT IN ES-

TWO COPIES OF THE SERVICE MANUAL CONTAINING A SPARE PARTS LIST, SCHEMATIC DIAGRAM, OPERATING INSTRUCTIONS, MAINTENANCE INSTRUCTIONS AND CALIBRATION INSTRUCTIONS SHALL BE SUPPLIED WITH EACH UNIT. ALSO, ONE COPY OF THE INSPECTION TEST DATA SHALL BE SUPPLIED WITH EACH UNIT.

COLOR CONTROL:
MANUAL: TWO-POSITION LEVER SELECTS RED OR BLACK PRINT-OUT.
REMOTE CONTROL: RED, BINARY "1" OR OPEN CIRCUIT; BLACK, BINARY "0". APPROXIMATELY 2 MEGOHMS PRINTER INPUT RESISTANCE.

COLUMN SUPPRESSION:
SINGLE LINE GROUNDED FOR EACH COLUMN SUPPRESSED (3 MA MAXIMUM, +10 VOLTS OPEN CIRCUIT).

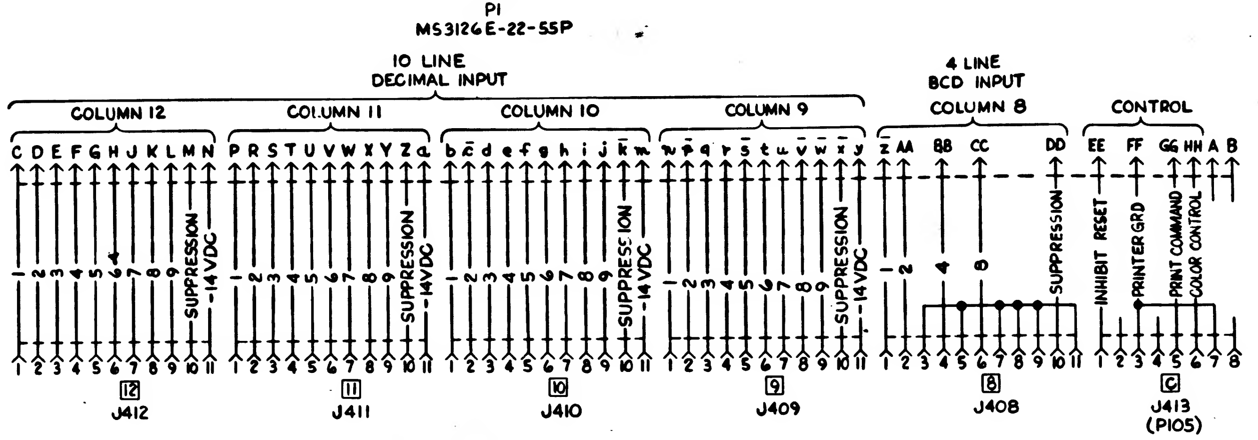
PRINT COMMAND:
CHANGE FROM BINARY "1" TO BINARY "0". BINARY "0", MUST BE MAINTAINED 100 MS MINIMUM AFTER PRINT COMMAND; BINARY "1", MUST BE MAINTAINED 15 MS MINIMUM BEFORE NEXT PRINT COMMAND.

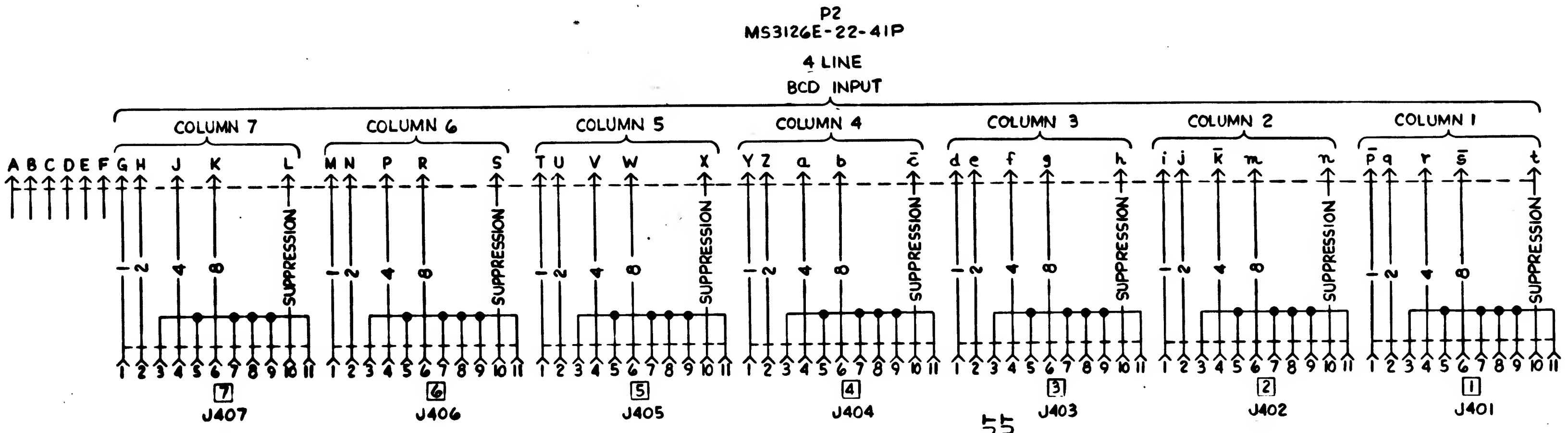
INHIBIT RESET COMMAND FROM PRINTER:
OCCURS WITHIN 50 MS AFTER PRINT COMMAND; 200 MS MAXIMUM DURATION.

INTERNAL GROUND:
PRINTER SHALL OPERATE NORMALLY WITH THE CIRCUIT GROUND BIASED FROM 0 TO ± 100 VOLTS ABOVE THE CHASSIS.

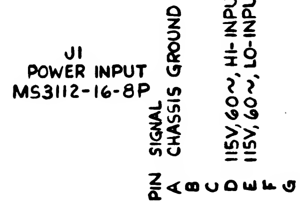
PRINTING RIBBON:
7/16" TWO-COLOR ADDING MACHINE RIBBON, RED-BLACK.
PAPER REQUIREMENTS:
STANDARD 2 1/4" ROLL TAPE OR FAN-FOLDED TAPE.

POWER REQUIREMENTS:
115V RMS ±10%, 60 CPS, 45 WATTS.



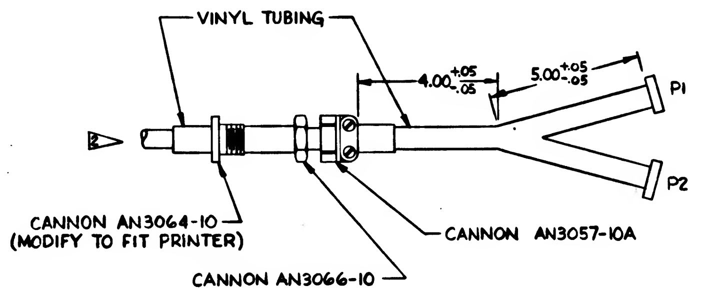


NOTES:
1. J401 THRU J412-AMPHENOL 78-S11T
2. J413-AMPHENOL 78-S8
3. BARS PLACED OVER LETTERS ARE FOR REFERENCE ONLY AND SIGNIFY LOWER CASE.

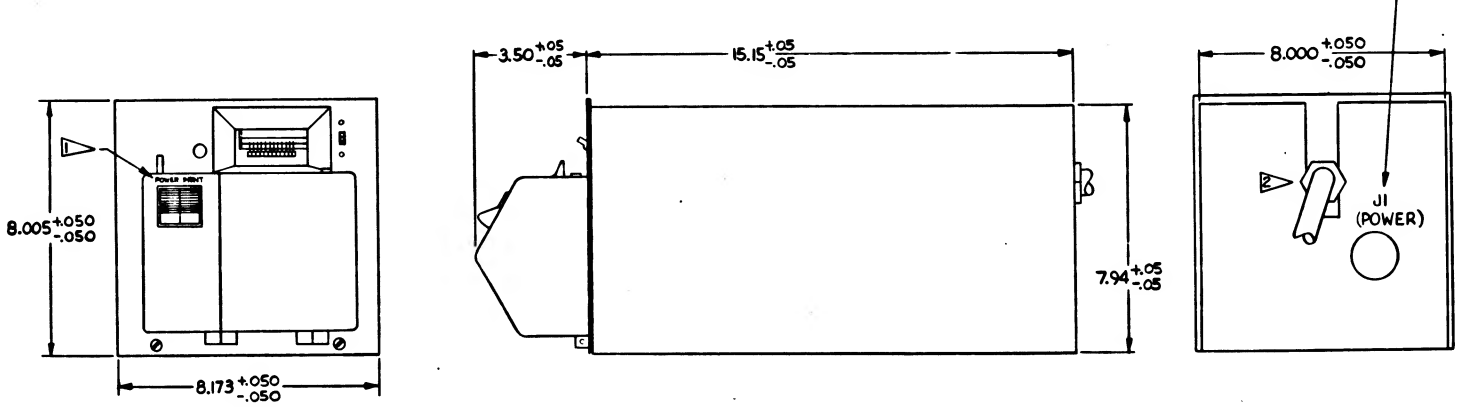


# FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00498 DATE 24 Apr 63



CONNECTOR SHOWN FOR REFERENCE, EXACT CONNECTOR LOCATION ON REAR OF ASSEMBLY IS TO BE DETERMINED BY SUPPLIER.



DATA SOURCE: MODEL 1453
BECKMAN INSTRUMENTS, INC.,
BERKELEY DIVISION,
RICHMOND, CALIFORNIA

*MAKE FROM (MODEL 1453)*

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| QUANTITY REQUIRED | | | | LIST OF MATERIALS OR PARTS LIST | | |

| | |
|---|---|
| 1900040-011 | |
| NEXT ASSY | USED ON |
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN SK44269
DRAWN E. McMillan DATE 8 APR 63
CHECKED Hogue 10 APR 63
APPROVAL 10 APR 63
APPROVAL 11 APR 63
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

PRINTER

CODE IDENT NO.
SIZE E
1900063
SCALE —
SHEET

1 CONDUCTOR INSULATION COLORS SHALL BE WHITE WITH BLUE TRACER AND WHITE WITH RED TRACER. JACKET COLOR SHALL BE WHITE.

2 CONDUCTOR INSULATION COLORS SHALL BE WHITE WITH BLUE TRACER, WHITE WITH RED TRACER AND WHITE WITH YELLOW TRACER. JACKET COLOR SHALL BE WHITE.

3 VENDOR ITEM, SEE SPECIFICATION CONTROL DRAWING.

PICTURE INCOMPLETE

(LIST OF PARTS & MATERIAL CONTINUED ON SHEET 2)

| | QUANTITY REQUIRED | EFFECTIVITY | LIST OF PARTS AND MATERIALS | | |
|---|---|---|---|---|---|
| | 011 | | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| | 1 | | 65 | | COAX-MIL-C-17C RG 188 A/U, 500 FT |
| | | | 64 | | |
| | | | 63 | | |
| | | | 62 | | |
| | | | 61 | | |
| | - | | 60 | MS-3126F-22-55SZ | |
| | 1 | | 59 | MS-3126F-22-55SY | |
| | - | | 58 | MS-3126F-22-55SX | |
| | - | | 57 | MS-3126F-22-55SW | |
| | - | | 56 | MS-3126F-22-55S | CONNECTOR-PLUG, ELEC |
| 3 | 199 | | 55 | -18 | |
| | 176 | | 54 | -12 | |
| | 1000 | | 53 | -11 | |
| | 1000 | | 52 | 1000242-8 | |
| | 199 | | 51 | -23 | |
| | 176 | | 50 | -14 | |
| | 1000 | | 49 | -10 | |
| 3 | 1000 | | 48 | 1000243-8 | FERRULE, ELEC COND |
| 1 | 1 | | 47 | | 22 AWG 1500 FT |
| 1 | 1 | | 46 | | 24 AWG 2500 FT |
| 1 | 1 | | 45 | | ES-698A-SV2 20 AWG 500 FT |
| 1 | 1 | | 44 | | ES-698-SV2 16 AWG 500 FT |
| | 1 | | 43 | | "D" 4 AWG 10 FT |
| | 1 | | 42 | | "B" 24 AWG 1000 FT |
| | 1 | | 41 | | "B" 22 AWG 2500 FT |
| | 1 | | 40 | | "B" 16 AWG 500 FT |
| | 1 | | 39 | | "D" 12 AWG 100 FT |
| | 1 | | 38 | | "D" 8 AWG 50 FT |
| | 1 | | 37 | | WIRE-MIL-W-16878, TYPE "D" 6 AWG, WHT, PVC, 50 FT |
| | | | 36 | | |
| | | | 35 | | |
| | | | 34 | | |
| | | | 33 | | |
| | 16 | | 32 | 1900448 | CABLE CLAMP BRACKET ASS'Y |
| | | | 31 | | |
| | 4 | | 30 | MS3126F-24-61SZ | |
| | 5 | | 29 | MS3126F-24-61SY | |
| | 10 | | 28 | MS3126F-24-61SX | |
| | 10 | | 27 | MS3126F-24-61SW | |
| | 12 | | 26 | MS3126F-24-61S | |
| | - | | 25 | MS3126F-22-55PY | |
| | 1 | | 24 | MS3126F-22-55PX | |
| | 2 | | 23 | MS3126F-22-55PW | |
| | 2 | | 22 | MS3126F-22-55P | |
| | - | | 21 | MS3126F-22-21S | CONNECTOR-PLUG, ELECTRICAL |

| | QUANTITY REQUIRED | EFFECTIVITY | LIST OF PARTS AND MATERIALS | | |
|---|---|---|---|---|---|
| | 011 | | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| | - | | 20 | MS3126F-22-21P | |
| | 1 | | 19 | MS3126F-20-41S | |
| | 1 | | 18 | MS3126F-20-41P | |
| | 2 | | 17 | MS3126F-20-16P | |
| | 1 | | 16 | MS3126F-16-8SW | |
| | 11 | | 15 | MS3126F-16-8S | |
| | - | | 14 | MS3126F-16-8P | |
| | 2 | | 13 | MS3126F-14-19S | |
| | 1 | | 12 | MS3126F-12-10SW | |
| | 1 | | 11 | MS3126F-12-10S | |
| | 1 | | 10 | MS3126F-12-10P | |
| | - | | 9 | MS3126F-12-3S | |
| | - | | 8 | MS3126F-12-3P | |
| | - | | 7 | MS3126F-10-6P | |
| | - | | 6 | MS3122E-22-55S | |
| | - | | 5 | MS3106E-32-6P | |
| | 1 | | 4 | MS3106A-18-1P | |
| | - | | 3 | MS3106E-22-5P | |
| 3 | 8 | | 2 | 1015922-001 | CONNECTOR-PLUG, ELECTRICAL |
| | 1 | | 1 | 1900351 | HARNESS FRAME MECHANICAL ASSY. |

REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
|---|---|---|---|---|---|
| A | | (A) CHANGE IN ACCORDANCE WITH MXC 186329 | MXC 186329 | 6 MAY 63 | FL WA |
| A1 | | CHANGE IN ACCORDANCE WITH MXC 187110 | | 14 JUN 63 | EFS |
| B | | CHANGE IN ACCORDANCE WITH MXC 187509 | | 25 JUN 63 | GB EFS |
| C | | CHANGE IN ACCORDANCE WITH MXC 187431 | | 25 JUN 63 | GB EFS |
| D | | CHANGE IN ACCORDANCE WITH MXC 188191 | | 31 JUL 63 | EF |
| D | | INCORPORATES CHANGES "A" THRU "D" PER TDRR 02573 | | 14 AUG 63 | WK. |
| E | | CHANGE IN ACCORDANCE WITH MXC 188286 | | 28 AUG 63 | C.A.M. MEM |
| F | | CHANGE IN ACCORDANCE WITH MXC 188341 | | 29 AUG 63 | C.A.M. MEM |
| | | ADDED CUSTOMERS DATA (V7-63) | | 29 AUG 63 | C.A.M. MEM |
| G | | CHANGE IN ACCORDANCE WITH MXC 189021 | | 29 AUG 63 | C.A.M. MEM |
| H | | REVISION STATUS CHANGED PER MXC-190824 | | 17 OCT 63 | MM EFS |
| J | | ADDED ITEM 32 & ASSOC INFO. PER MXC-190877.<br>REVISED PER TDR 04416 | | 24 OCT 63 | JEL |

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00999 DATE 24 Sept 63

| | |
|---|---|
| J | H |
| H | H |
| G | G |
| F | F |
| E | E |
| D | D |
| C | B |
| SHEET 1 | SHEET 2 |

REVISION STATUS OF SHEETS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900031 | | |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN A. J. Fuder DATE 9 APR 63
CHECKED Mali Ramster 10 APR 63
APPROVAL 4/10/63
APPROVAL 10 APR 63
NASA APPROVAL 4-29-63
J P Gilmore
MIT APPROVAL 4/?/63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME AND HARNESS ASSEMBLY

CODE IDENT NO.
SIZE D
1900064
SCALE —
SHEET 1 OF 2

INCHES 0 1 2
PHOTOGRAPHIC SCALE ONLY

1. CONDUCTOR INSULATION COLORS SHALL BE WHITE WITH BLUE TRACER AND WHITE WITH RED TRACER. JACKET COLOR SHALL BE WHITE.

2. CONDUCTOR INSULATION COLORS SHALL BE WHITE WITH BLUE TRACER, WHITE WITH RED TRACER AND WHITE WITH YELLOW TRACER. JACKET COLOR SHALL BE WHITE.

3. VENDOR ITEM, SEE SPECIFICATION CONTROL DRAWING.

PICTURE INCOMPLETE

(LIST OF PARTS & MATERIAL CONTINUED ON SHEET 2)

| | 011 | EFFEC-TIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION | | |
|---|---|---|---|---|---|---|---|
| | 1 | | 65 | | COAX-MIL-C-17C RG 188 A/U, 500 FT | | |
| | | | 64 | | | | |
| | | | 63 | | | | |
| | | | 62 | | | | |
| | | | 61 | | | | |
| | - | | 60 | MS-3126F-22-55SZ | | | |
| | 1 | | 59 | MS-3126F-22-55SY | | | |
| | - | | 58 | MS-3126F-22-55SX | | | |
| | - | | 57 | MS-3126F-22-55SW | | | |
| | - | | 56 | MS-3126F-22-55S | CONNECTOR-PLUG, ELEC | | |
| 3 | 199 | | 55 | -18 | | | |
| | 176 | | 54 | -12 | | | |
| | 1000 | | 53 | -11 | | | |
| | 1000 | | 52 | 1000242-8 | | | |
| | 199 | | 51 | -23 | | | |
| | 176 | | 50 | -14 | | | |
| | 1000 | | 49 | -10 | | | |
| 3 | 1000 | | 48 | 1000243-8 | FERRULE, ELEC COND | | |
| 1 | 1 | | 47 | | | 22 AWG | 1500 FT |
| 1 | 1 | | 46 | | | 24 AWG | 2500 FT |
| 1 | 1 | | 45 | | ES-698A-SV2 | 20 AWG | 500 FT |
| 1 | 1 | | 44 | | ES-698-SV2 | 16 AWG | 500 FT |
| | 1 | | 43 | | | "D" 4 AWG | 10 FT |
| | 1 | | 42 | | | "B" 24 AWG | 1000 FT |
| | 1 | | 41 | | | "B" 22 AWG | 2500 FT |
| | 1 | | 40 | | | "B" 16 AWG | 500 FT |
| | 1 | | 39 | | | "D" 12 AWG | 100 FT |
| | 1 | | 38 | | | "D" 8 AWG | 50 FT |
| | 1 | | 37 | | WIRE-MIL-W-16878, TYPE "D" 6 AWG, WHT, PVC, 50 FT | | |
| | | | 36 | | | | |
| | | | 35 | | | | |
| | | | 34 | | | | |
| | | | 33 | | | | |
| | 16 | | 32 | 1900448 | CABLE CLAMP BRACKET ASS'Y | | |
| | | | 31 | | | | |
| | 4 | | 30 | MS3126F-24-61SZ | | | |
| | 5 | | 29 | MS3126F-24-61SY | | | |
| | 10 | | 28 | MS3126F-24-61SX | | | |
| | 10 | | 27 | MS3126F-24-61SW | | | |
| | 12 | | 26 | MS3126F-24-61S | | | |
| | - | | 25 | MS3126F-22-55PY | | | |
| | 1 | | 24 | MS3126F-22-55PX | | | |
| | 2 | | 23 | MS3126F-22-55PW | | | |
| | 2 | | 22 | MS3126F-22-55P | | | |
| | - | | 21 | MS3126F-22-21S | CONNECTOR-PLUG, ELECTRICAL | | |

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

Ⓚ REPLACED WITH CHANGE BY REV L

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
| A | | Ⓐ CHANGE IN ACCORDANCE WITH MXC 186329 | MXC 186329 | 6 MAY 63 | FL WD |
| A1 | | CHANGE IN ACCORDANCE WITH MXC 187110 | | 14 JUN 63 | EFS |
| B | | CHANGE IN ACCORDANCE WITH MXC 187309 | | 25 JUN 63 | GB EFS |
| C | | CHANGE IN ACCORDANCE WITH MXC 187431 | | 25 JUN 63 | GB EFS |
| D | | CHANGE IN ACCORDANCE WITH MXC 188191 | | 31 JUL 63 | EF |
| D | | INCORPORATES CHANGES "A" THRU "D" PER TDRR 02573 | | 14 AUG 63 | WK. |
| E | | CHANGE IN ACCORDANCE WITH MXC 188286 | | 28 AUG 63 | C.A.M. MEM |
| F | | CHANGE IN ACCORDANCE WITH MXC 188341 | | 29 AUG 63 | C.A.M. MEM |
| | | ADDED CUSTOMERS DATA (V7-63) | | 29 AUG 63 | C.A.M. MEM |
| G | | CHANGE IN ACCORDANCE WITH MXC 189021 | | 29 AUG 63 | C.A.M. MEM |
| H | | REVISION STATUS CHANGED PER MXC-190824 | | 17 OCT 63 | MM EFS |
| J | | ADDED ITEM 32 & ASSOC INFO. PER MXC-190877.<br>REVISED PER TDR 04466 | | 24 OCT 63<br>5 NOV 63 | JEL<br>WK |
| K | | REPLACED WITH CHANGE BY REV. L PER MXC 191495<br>REVISED PER TDR 05209 | | 27 NOV 63<br>12-7-63 | JJJ<br>WK |

Ⓜ

| SHEET 1 | SHEET 2 |
|---|---|
| K | K |
| J | H |
| H | H |
| G | G |
| F | F |
| E | E |
| D | D |
| C | B |

REVISION STATUS OF SHEETS

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 00999 DATE 24 Apr 63

| | 011 | EFFEC-TIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|
| | - | | 20 | MS3126F-22-21P | |
| | 1 | | 19 | MS3126F-20-41S | |
| | 1 | | 18 | MS3126F-20-41P | |
| | 2 | | 17 | MS3126F-20-16P | |
| | 1 | | 16 | MS3126F-16-8SW | |
| | 11 | | 15 | MS3126F-16-8S | |
| | - | | 14 | MS3126F-16-8P | |
| | 2 | | 13 | MS3126F-14-19S | |
| | 1 | | 12 | MS3126F-12-10SW | |
| | 1 | | 11 | MS3126F-12-10S | |
| | 1 | | 10 | MS3126F-12-10P | |
| | - | | 9 | MS3126F-12-3S | |
| | - | | 8 | MS3126F-12-3P | |
| | - | | 7 | MS3126F-10-6P | |
| | - | | 6 | MS3122E-22-55S | |
| | - | | 5 | MS3106E-32-6P | |
| | 1 | | 4 | MS3106A-18-1P | |
| | - | | 3 | MS3106E-22-5P | |
| 3 | 8 | | 2 | 1015922-001 | CONNECTOR-PLUG, ELECTRICAL |
| | 1 | | 1 | 1900351 | HARNESS FRAME MECHANICAL ASSY. |

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900031 | | |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN A. J. Fludge DATE 9-APR-63
CHECKED 10 APR 63
APPROVAL 4-10-63
APPROVAL 10 APR 63
NASA APPROVAL J P Helmuge 4-29-63
MIT APPROVAL 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME AND HARNESS ASSEMBLY

CODE IDENT NO. SIZE D 1900064
SCALE —
SHEET 1 OF 2

MIL 10758-F

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1900064 K

## REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD |
|---|---|---|---|---|---|
| B | | CHANGE IN ACCORDANCE WITH MXC 187309 | | 25 JUN 63 | |
| D | | CHANGE IN ACCORDANCE WITH MXC 188191, TDRR 02573 | | 31 JUL 63 | ET |
| | | TDRR 02573 | | 14 AUG 1963 | WDK |
| E | | CHANGE IN ACCORDANCE WITH MXC 188286 | | 28 AUG 63 | C.A.M. MEM |
| F | | CHANGE IN ACCORDANCE WITH MXC 188341 | | 29 AUG 63 | C.A.M. MEM |
| | | ADDED CUSTOMER DATA (V7-63) | | 29 AUG 63 | C.A.M. MEM |
| G | | CHANGE IN ACCORDANCE WITH MXC 189021 | | 29 AUG 63 | C.A.M. MEM |
| H | | ADDED ITEM 142 THR 148 & ASSOC INFO., PER MXC-190824 | | 17 OCT 63 | MM |
| | | PER TDRR 04416 | | 5 NOV 63 | WK. |
| K | | REPLACED WITH CHANGE BY REV. L<br>PER MXC 191495 | | 27 NOV 63 | J J J |
| | | REVISED PER TDR 05209 | | 12-17-63 | WK |

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 00999 DATE 24 April 63

| QUANTITY REQUIRED 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|
| 1 | | 148 | MS3127E-22-55SY | |
| 1 | | 147 | MS3127E-22-55SX | |
| 1 | | 146 | MS3127E-22-55PZ | |
| 1 | | 145 | MS3127E-22-55PY | |
| 1 | | 144 | MS3127E-14-15S | |
| 1 | | 143 | MS3127E-20-41PW | |
| 1 | | 142 | MS3127E-20-41P | CONNECTOR RECEPTACLE |
| 1 | | 141 | MS3126F-24-61PZ | CONNECTOR-PLUG, ELECTRICAL |
| 24 | | 140 | 1006783-23 | SCREW, BUTTON, HEX. SOCKET |
| 24 | | 139 | AN960-C6L | WASHER, FLAT #6 |
| 24 | | 138 | AN363C632 | NUT, SELF LOCKING |
| 6 | | 137 | 1900368-005 | GASKET, CONNECTOR |
| 3 | | 136 | 1900369 | GASKET, CONNECTOR |
| 1 | | 135 | 1900365 | PANEL, ASSEMBLY (INSEP.) |
| 1 | | 134 | MS3127E-22-55P | CONNECTOR-RECPTACLE, ELEC. |

LIST OF PARTS AND MATERIALS

| QUANTITY REQUIRED 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|
| 1 | | 133 | 1016048-25 | TERMINAL LUG |
| 4 | | 132 | 1015902-8 | TERMINAL LUG |
| 1 | | 131 | | WIRE ND 1002181 TYPE I CLASS I 20AWG WHITE 100FT.TL |
| 20 | | 130 | -003 | |
| 50 | | 129 | -002 | |
| 20 | | 128 | 1016006-001 | SPLICE REDUCER |
| 1 | | 127 | 1015906-104 | |
| 1 | | 126 | SW | |
| 1 | | 125 | PX | |
| 1 | | 124 | MS3127E-22-55 PW | CONNECTOR-RECEPTACLE, ELEC. |
| 1 | | 123 | MS3057A-10 | CLAMP-CABLE |
| 1 | | 122 | MS3127E-20-41SW | CONNECTOR-RECEPTACLE |
| 1 | | 121 | MS3126F-14-19P | CONNECTOR-PLUG |
| 50 | | 120 | 1010490-200 | INSULATION-SLEEVING, ELEC. |
| 50 | | 119 | 1000242-015 | |
| 50 | | 118 | 1000242-004 | |
| 50 | | 117 | 1000243-003 | FERRULE-ELEC. |
| 8 | | 116 | -168 | |
| – | | 115 | -250 | |
| – | | 114 | -166 | |
| – | | 113 | 1015864-164 | INSULATION-SLEEVING, CLEAR |
| 1 | | 112 | MS3127E-22-55S | CONNECTOR-RECEPTACLE, ELEC. |
| 107 | | 111 | 1015902-3 | |
| – | | 110 | 1015902-12 | |
| – | | 109 | 1015902-15 | TERMINAL-LUG, RING TONGUE, CRIMP |
| 400 | | 108 | 1015966-003 | JACK-WIRE TIP (AWG 20) |
| 4400 | | 107 | 1015966-001 | JACK-WIRE TIP (AWG 24-22) |
| | | 106 | | |
| | | 105 | | |
| 198 | | 104 | 1000242-16 | |
| 200 | | 103 | -11 | |
| 198 | | 102 | 1000243-15 | FERRULE, ELEC. |
| 1 | | 101 | MS3127E-20-41S | CONNECTOR-RECEPTACLE ELEC. |
| 1 | | 100 | MS3127E-16-8S | CONNECTOR-RECEPTACLE ELEC. |
| 1 | | 99 | | ES698A SV3 20AWG 200 FT. |
| 1 | | 98 | | ES698A SV3 22AWG 200 FT. |
| 1 | | 97 | -103 | |
| 1 | | 96 | -102 | |
| 1 | | 95 | -101 | |
| 1 | | 94 | 1015906-100 | CONNECTOR-RECEPTACLE ELEC. |
| 50 | | 93 | -31 | BODY-COAX OUTER, FEMALE |
| 50 | | 92 | -11 | CONTACT-COAX PIN |
| 160 | | 91 | -51 | RING-COAX CONNECTOR |
| 110 | | 90 | -41 | BODY-COAX OUTER, MALE |
| 110 | | 89 | 1015908-21 | SOCKET-COAX CONTACT |
| 11 | | 88 | 1015905-61 | CLAMP-STRAIN RELIEF |
| 200 | | 87 | 1000242-5 | FERRULE-ELEC. COND. |
| 200 | | 86 | 1000243-6 | FERRULE-ELEC. COND. |

LIST OF PARTS AND MATERIALS

| QUANTITY REQUIRED 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|
| 1200 | | 85 | -198 | |
| 2974 | | 84 | -196 | |
| 372 | | 83 | 1010490-194 | INSULATION-SLEEVING |
| 1 | | 82 | -24-61SY | |
| 1 | | 81 | -24-61SX | |
| 1 | | 80 | -24-61SW | |
| 1 | | 79 | -24-61S | |
| 1 | | 78 | -24-61PZ | |
| 1 | | 77 | -24-61PY | |
| 1 | | 76 | -24-61PX | |
| 1 | | 75 | -24-61PW | |
| 1 | | 74 | MS3127E-24-61P | CONNECTOR-RECEPTACLE |
| 1 | | 73 | -104 | |
| 1 | | 72 | -103 | |
| 2 | | 71 | -102 | |
| 3 | | 70 | -101 | |
| 4 | | 69 | 1015907-100 | |
| 1 | | 68 | -10-6S | |
| 1 | | 67 | -20-41SW | |
| 1 | | 66 | MS3126F-20-16S | CONNECTOR-PLUG, ELEC. |

LIST OF MATERIALS OR PARTS LIST

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

Ⓚ REPLACED WITH CHANGE BY REV L

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS 9-479

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN 13 MAY 63

CHECKED 15 Jun 63

APPROVAL

APPROVAL 8/14/63

NASA APPROVAL 8-14-63

MIT APPROVAL 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME AND HARNESS ASSEMBLY

CODE IDENT NO. | SIZE D | 1900064

SCALE —

SHEET 2 OF 2

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1900064 L

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
|---|---|---|---|---|---|
| L | | REPLACES REV. K WITH CHANGE PER MXC 191495<br>REVISED PER TDR 05209 | | 27 NOV 63<br>12-7-63 | J.J.<br>J.E.G.<br>WR. |

NOTES

1. CONDUCTOR INSULATION COLORS SHALL BE-WHITE WITH BLUE TRACER AND WHITE WITH RED TRACER. JACKET COLOR SHALL BE WHITE.
2. CONDUCTOR INSULATION COLORS SHALL BE WHITE WITH BLUE TRACER, WHITE WITH RED TRACER AND WHITE WITH YELLOW TRACER. JACKET COLOR SHALL BE WHITE.
3. VENDOR ITEM, SEE SPECIFICATION CONTROL DRAWING.

PICTURE INCOMPLETE

(LIST OF PARTS & MATERIAL CONTINUED ON SHEET 2)

| | QUANTITY REQUIRED | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|---|
| SEE NOTE 2 | | | | 1 | | | | ES698A SV3 20 AWG 200 FT |
| | | | | 1 | | | | ES698A SV3 22 AWG 200 FT |
| SEE NOTE 3 | | | | 110 | | | 1015908-31 | BODY-COAX OUTER, FEMALE |
| | | | | 110 | | | 1015908-11 | CONTACT-COAX PIN |
| | | | | 110 | | | 1015908-51 | RING-COAX CONNECTOR |
| | | | | 11 | | | 1015905-61 | CLAMP-STRAIN RELIEF |
| | | | | 152 | | | 1000242-5 | FERRULE-ELEC COND |
| | | | | 152 | | | 1000243-6 | FERRULE-ELEC COND |
| | | | | 844 | | | 1010490-198 | INSULATION-SLEEVING |
| | | | | 2675 | | | 1010490-196 | INSULATION-SLEEVING |
| | | | | 370 | | | 1010490-194 | INSULATION-SLEEVING |
| | | | | 1 | | | MS3127E-24-61SY | CONNECTOR-RECEPTACLE |
| | | | | 1 | | | MS3127E-24-61SX | CONNECTOR-RECEPTACLE |
| | | | | 1 | | | MS3127E-24-61SW | CONNECTOR-RECEPTACLE |
| | | | | 1 | | | MS3127E-24-61S | CONNECTOR-RECEPTACLE |
| | | | | 1 | | | MS3127E-24-61PZ | CONNECTOR-RECEPTACLE |
| | | | | 1 | | | MS3127E-24-61PW | CONNECTOR-RECEPTACLE |
| SEE NOTE 3 | | | | 1 | | | 1015907-104 | CONNECTOR-PLUG, ELEC |
| | | | | 1 | | | 1015907-103 | CONNECTOR-PLUG, ELEC |
| | | | | 2 | | | 1015907-102 | CONNECTOR-PLUG, ELEC |
| | | | | 3 | | | 1015907-101 | CONNECTOR-PLUG, ELEC |
| | | | | 4 | | | 1015907-100 | CONNECTOR-PLUG, ELEC |
| | | | | 1 | | | MS3126F-10-6S | CONNECTOR-PLUG, ELEC |
| | | | | 1 | | | MS3126F-20-41SW | CONNECTOR-PLUG, ELEC |
| | | | | 1 | | | MS3126F-20-16S | CONNECTOR-PLUG, ELEC |
| | | | | 1 | | | | COAX-MIL-C-17C R6 188 A/U, 500 FT |
| | | | | - | | | MS3126F-22-55SZ | CONNECTOR-PLUG, ELEC |
| | | | | 1 | | | MS3126F-22-55SY | CONNECTOR-PLUG, ELEC |
| | | | | - | | | MS3126F-22-55SX | CONNECTOR-PLUG, ELEC |
| | | | | - | | | MS3126F-22-55SW | CONNECTOR-PLUG, ELEC |
| | | | | - | | | MS3126F-22-55S | CONNECTOR-PLUG, ELEC |
| SEE NOTE 3 | | | | 199 | | | 1000242-18 | FERRULE, ELEC COND |
| | | | | 176 | | | 1000242-12 | FERRULE, ELEC COND |
| | | | | 999 | | | 1000242-11 | FERRULE, ELEC COND |
| | | | | 703 | | | 1000242-8 | FERRULE, ELEC COND |
| | | | | 199 | | | 1000243-23 | FERRULE, ELEC COND |
| | | | | 175 | | | 1000243-14 | FERRULE, ELEC COND |
| | | | | 1000 | | | 1000243-10 | FERRULE, ELEC COND |
| | | | | 703 | | | 1000243-8 | FERRULE, ELEC COND |
| SEE NOTE 1 | | | | 1 | | | | WIRE-ES-698A-SV2 22 AWG WHT, PVC, 1500 FT |
| | | | | 1 | | | | WIRE-ES-698A-SV2 24 AWG WHT, PVC, 2500 FT |
| | | | | 1 | | | | WIRE-ES-698A-SV2 20 AWG WHT, PVC, 500 FT |
| | | | | 1 | | | | WIRE-ES-698-SV2 16 AWG WHT, PVC, 500 FT |
| | | | | 1 | | | | WIRE-MIL-W-16878, TYPE "D" 4 AWG, WHT, PVC, 10 FT |
| | | | | 1 | | | | WIRE-MIL-W-16878, TYPE "B" 24 AWG, WHT, PVC, 1000 FT |
| | | | | 1 | | | | WIRE-MIL-W-16878, TYPE "B" 22 AWG, WHT, PVC, 2500 FT |
| | | | | 1 | | | | WIRE-MIL-W-16878, TYPE "B" 16 AWG, WHT, PVC, 500 FT |
| | | | | 1 | | | | WIRE-MIL-W-16878, TYPE "D" 12 AWG, WHT, PVC, 100 FT |
| | | | | 1 | | | | WIRE-MIL-W-16878, TYPE "D" 8 AWG, WHT, PVC, 50 FT |
| | | | | 1 | | | | WIRE-MIL-W-16878, TYPE "D" 6 AWG, WHT, PVC, 50 FT |
| | | | | 16 | | | 1900448 | CABLE CLAMP BRACKET ASSY |

LIST OF PARTS AND MATERIALS

| L | L |
|---|---|
| SHEET 1 | SHEET 2 |

REVISION STATUS OF SHEETS

**FOR INFORMATION ONLY**

**CLASS B RELEASE TDR No.** 20999 **DATE** 24 Apr 63

Ⓛ REPLACES REV K WITH CHANGE

| QUANTITY REQUIRED | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | 2 | | | MS3126F-24-61SZ | (1897048-614) CONNECTOR-PLUG, ELEC |
| | | | 3 | | | MS3126F-24-61SY | (1897048-613) CONNECTOR-PLUG, ELEC |
| | | | 8 | | | MS3126F-24-61SX | (1897048-612) CONNECTOR-PLUG, ELEC |
| | | | 8 | | | MS3126F-24-61SW | (1897048-611) CONNECTOR-PLUG, ELEC |
| | | | 10 | | | MS3126F-24-61S | (1897048-610) CONNECTOR-PLUG, ELEC |
| | | | - | | | MS3126F-22-55PY | CONNECTOR-PLUG, ELEC |
| | | | 1 | | | MS3126F-22-55PX | CONNECTOR-PLUG, ELEC |
| | | | 1 | | | MS3126F-22-55PW | (1897045-551) CONNECTOR-PLUG, ELEC |
| | | | 2 | | | MS3126F-22-55P | CONNECTOR-PLUG, ELEC |
| | | | - | | | MS3126F-22-21S | CONNECTOR-PLUG, ELEC |
| | | | - | | | MS3126F-22-21P | CONNECTOR-PLUG, ELEC |
| | | | 1 | | | MS3126F-20-41S | CONNECTOR-PLUG, ELEC |
| | | | 1 | | | MS3126F-20-41P | CONNECTOR-PLUG, ELEC |
| | | | 2 | | | MS3126F-20-16P | CONNECTOR-PLUG, ELEC |
| | | | 1 | | | MS3126F-16-8SW | CONNECTOR-PLUG, ELEC |
| | | | 11 | | | MS3126F-16-8S | CONNECTOR-PLUG, ELEC |
| | | | - | | | MS3126F-16-8P | CONNECTOR-PLUG, ELEC |
| | | | 2 | | | MS3126F-14-19S | CONNECTOR-PLUG, ELEC |
| | | | 1 | | | MS3126F-12-10SW | CONNECTOR-PLUG, ELEC |
| | | | 1 | | | MS3126F-12-10S | CONNECTOR-PLUG, ELEC |
| | | | 1 | | | MS3126F-12-10P | CONNECTOR-PLUG, ELEC |
| | | | - | | | MS3126F-12-3S | CONNECTOR-PLUG, ELEC |
| | | | - | | | MS3126F-12-3P | CONNECTOR-PLUG, ELEC |
| | | | - | | | MS3126F-10-6P | CONNECTOR-PLUG, ELEC |
| | | | - | | | MS3122E-22-55S | CONNECTOR-PLUG, ELEC |
| | | | - | | | MS3106E-32-6P | CONNECTOR-PLUG, ELEC |
| | | | 1 | | | MS3106A-18-1P | CONNECTOR-PLUG, ELEC |
| | | | - | | | MS3106E-22-5P | CONNECTOR-PLUG, ELEC |
| | | | 8 | | | 1015922-001 | CONNECTOR-PLUG, ELEC |
| | | | 1 | | | 1900351 | HARNESS FRAME MECHANICAL ASSY |

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900031 | | |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — DECIMALS + — ANGLES + —

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN A.J. FLUDER DATE 9 APR 63
CHECKED MALIKOWSKI 10 APR 63
APPROVAL P.J. STIER 10 APR 63
APPROVAL L Gedeman 12/16/63
NASA APPROVAL 12/17/63
MIT APPROVAL 17 Dec 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

## FRAME AND HARNESS ASSEMBLY

CODE IDENT NO.

SIZE D

1900064

SCALE —

SHEET 1 OF 2

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1900064 L

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
|---|---|---|---|---|---|
| L | | REPLACES REV.K WITH CHANGE PER MXC 191495<br>REVISED PER TDR 05207 | | 27 NOV 63<br>12-17-63 | J.J. J.E.G. |

| QUANTITY REQUIRED | | | | EFFECTIVITY | LIST OF PARTS AND MATERIALS | | |
|---|---|---|---|---|---|---|---|
| | | | 011 | | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| | | | 1 | | | | LIST WIRE "AA" |
| | | | 1 | | | 1900922 | "P" HARNESS |
| | | | 1 | | | 1900751 | "N" HARNESS |
| | | | 1 | | | 1900750 | "M" HARNESS |
| | | | 1 | | | 1900749 | "L" HARNESS |
| | | | 1 | | | 1900748 | "K" HARNESS |
| | | | 1 | | | 1900747 | "J" HARNESS |
| | | | 1 | | | 1900746 | "H" HARNESS |
| | | | 1 | | | 1900745 | "G" HARNESS |
| | | | 1 | | | 1900744 | "F" HARNESS |
| | | | 1 | | | 1900743 | "E" HARNESS |
| | | | 1 | | | 1900742 | "D" HARNESS |
| | | | 1 | | | 1900741 | "C" HARNESS |
| | | | 1 | | | MS3127E-22-55SY | CONNECTOR-RECEPTACLE |
| | | | 1 | | | MS3127E-22-55SX | CONNECTOR-RECEPTACLE |
| | | | 1 | | | MS3127E-22-55PZ | CONNECTOR-RECEPTACLE |
| | | | 1 | | | MS3127E-22-55PY | CONNECTOR-RECEPTACLE |
| | | | 1 | | | MS3127E-14-15S | CONNECTOR-RECEPTACLE |
| | | | 1 | | | MS3127E-20-41PW | CONNECTOR-RECEPTACLE |
| | | | 1 | | | MS3127E-20-41P | CONNECTOR-RECEPTACLE |
| | | | 1 | | | MS3126F24-61PZ | (1897047-614) CONNECTOR, PLUG, ELEC |
| | | | 24 | | | 1006783-23 | SCREW BUTTON HEX. SOC. |
| | | | 24 | | | AN960-C6L | (1897006-036) WASHER, FLAT NO. 6 |
| | | | 24 | | | AN363C632 | (1896990-261) NUT, SELF LOCKING |
| | | | 6 | | | 1900368-005 | GASKET, CONNECTOR |
| | | | 3 | | | 1900369 | GASKET, CONNECTOR |
| | | | 1 | | | 1900365 | PANEL (INSEP) ASSEMBLY |
| | | | 1 | | | 1016048-25 | TERMINAL LUG |
| | | | 4 | | | 1015902-8 | TERMINAL LUG |
| | | | 1 | | | | WIRE ND1002181 TYPE 1, CLASS 1 20AWG WHT 100 FT LONG |
| | | | 20 | | | 1016006-003 | SPLICE REDUCER |
| | | | 50 | | | 1016006-002 | SPLICE REDUCER |
| | | | 20 | | | 1016006-001 | SPLICE REDUCER |
| | | | 1 | | | MS3127E-22-55SW | CONNECTOR-RECEPTACLE, ELEC |
| | | | 1 | | | MS3127E-22-55PX | CONNECTOR-RECEPTACLE, ELEC |
| | | | 1 | | | MS3057A-10 | CLAMP-CABLE |
| | | | 1 | | | MS3127E-20-41SW | CONNECTOR-RECEPTACLE |
| | | | 1 | | | MS3126F-14-19P | CONNECTOR-PLUG |
| | | | 39 | | | 1010490-200 | INSULATION-SLEEVING, ELEC |
| | | | 49 | | | 1000242-015 | FERRULE-ELEC |
| | | | 39 | | | 1000242-004 | FERRULE-ELEC |
| | | | 39 | | | 1000243-003 | FERRULE-ELEC |
| | | | 8 | | | 1015864-168 | INSULATION-SLEEVING, CLEAR |
| | | | - | | | 1015864-250 | INSULATION-SLEEVING, CLEAR |
| | | | - | | | 1015864-166 | INSULATION-SLEEVING, CLEAR |
| | | | - | | | 1015864-164 | INSULATION-SLEEVING, CLEAR |
| | | | 1 | | | MS3127E-22-55S | CONNECTOR-RECEPTACLE, ELEC |
| | | | 107 | | | 1015902-3 | TERMINAL-LUG, RING TONGUE, CRIMP |
| | | | - | | | 1015902-12 | TERMINAL-LUG, RING TONGUE, CRIMP |
| | | | 400 | | | 1015966-003 | JACK-WIRE TIP (AWG 20) |
| | | | 3166 | | | 1015966-001 | JACK-WIRE TIP (AWG 24-22) |
| | | | 198 | | | 1000242-16 | FERRULE, ELEC. |
| | | | 199 | | | 1000243-11 | FERRULE, ELEC |
| | | | 198 | | | 1000243-15 | FERRULE, ELEC |
| | | | 1 | | | MS3127E-16-8S | CONNECTOR-RECEPTACLE ELEC |

SEE NOTE 3 (1015902-8)

SEE NOTE 3 (1000242-015 through 1015864-164)

SEE NOTE 3 (1015902-3 through 1000243-15)

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 00999 DATE 24 Apr 63

Ⓛ REPLACES REV K WITH CHANGE

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900031 | | |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN A.J. FLUDER DATE 9 APR 63
CHECKED MALIKOWSKI 10 APR 63
APPROVAL P.G. STIER 10 APR 63
APPROVAL 12/16/63
NASA APPROVAL 12/17/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME AND HARNESS
ASSEMBLY

CODE IDENT NO. SIZE D 1900064
SCALE — SHEET 2 OF 2

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1900064M

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
|---|---|---|---|---|---|
| L | | REPLACES REV. K WITH CHANGE PER MXC 191495<br>REVISED PER TDR 05209 | | 27 NOV 63<br>12-7-63 | J.J.J. / V.E.G.<br>WK |
| M | | REPLACED WITH CHANGE BY REV. N PER 192667<br>REVISED PER TDR 06846 | | 17 JAN 64 | KC / [illegible]<br>WK |

REVISIONS

NOTES

1. CONDUCTOR INSULATION COLORS SHALL BE WHITE WITH BLUE TRACER AND WHITE WITH RED TRACER. JACKET COLOR SHALL BE WHITE.
2. CONDUCTOR INSULATION COLORS SHALL BE WHITE WITH BLUE TRACER, WHITE WITH RED TRACER AND WHITE WITH YELLOW TRACER. JACKET COLOR SHALL BE WHITE.
3. VENDOR ITEM, SEE SPECIFICATION CONTROL DRAWING.

PICTURE INCOMPLETE

(LIST OF PARTS & MATERIAL CONTINUED ON SHEET 2)

| | QUANTITY REQUIRED | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|---|
| SEE NOTE 2 | | | | 1 | | | | ES698A SV3 20 AWG 200 FT |
| | | | | 1 | | | | ES698A SV3 22 AWG 200 FT |
| SEE NOTE 3 | | | | 110 | | | 1015908-31 | BODY-COAX OUTER, FEMALE |
| | | | | 110 | | | 1015908-11 | CONTACT-COAX PIN |
| | | | | 110 | | | 1015908-51 | RING-COAX CONNECTOR |
| | | | | 11 | | | 1015905-61 | CLAMP-STRAIN RELIEF |
| | | | | 152 | | | 1000242-5 | FERRULE-ELEC COND |
| | | | | 152 | | | 1000243-6 | FERRULE-ELEC COND |
| | | | | 844 | | | 1010490-198 | INSULATION-SLEEVING |
| | | | | 2675 | | | 1010490-196 | INSULATION-SLEEVING |
| | | | | 370 | | | 1010490-194 | INSULATION-SLEEVING |
| | | | | 1 | | | MS3127E-24-61SY | CONNECTOR-RECEPTACLE |
| | | | | 1 | | | MS3127E-24-61SX | CONNECTOR-RECEPTACLE |
| | | | | 1 | | | MS3127E-24-61SW | CONNECTOR-RECEPTACLE |
| | | | | 1 | | | MS3127E-24-61S | CONNECTOR-RECEPTACLE |
| | | | | 1 | | | MS3127E-24-61PZ | CONNECTOR-RECEPTACLE |
| | | | | 1 | | | MS3127E-24-61PW | CONNECTOR-RECEPTACLE |
| SEE NOTE 3 | | | | 1 | | | 1015907-104 | CONNECTOR-PLUG, ELEC |
| | | | | 1 | | | 1015907-103 | CONNECTOR-PLUG, ELEC |
| | | | | 2 | | | 1015907-102 | CONNECTOR-PLUG, ELEC |
| | | | | 3 | | | 1015907-101 | CONNECTOR-PLUG, ELEC |
| | | | | 4 | | | 1015907-100 | CONNECTOR-PLUG, ELEC |
| | | | | 1 | | | MS3126F-10-6S | CONNECTOR-PLUG, ELEC |
| | | | | 1 | | | MS3126F-20-41SW | CONNECTOR-PLUG, ELEC |
| | | | | 1 | | | MS3126F-20-16S | CONNECTOR-PLUG, ELEC |
| | | | | 1 | | | | COAX-MIL-C-17C R6 188 A/U, 500 FT |
| | | | | - | | | MS3126F-22-55SZ | CONNECTOR-PLUG, ELEC |
| | | | | 1 | | | MS3126F-22-55SY | CONNECTOR-PLUG, ELEC |
| | | | | - | | | MS3126F-22-55SX | CONNECTOR-PLUG, ELEC |
| | | | | - | | | MS3126F-22-55SW | CONNECTOR-PLUG, ELEC |
| | | | | - | | | MS3126F-22-55S | CONNECTOR-PLUG, ELEC |
| SEE NOTE 3 | | | | 199 | | | 1000242-18 | FERRULE, ELEC COND |
| | | | | 176 | | | 1000242-12 | FERRULE, ELEC COND |
| | | | | 999 | | | 1000242-11 | FERRULE, ELEC COND |
| | | | | 703 | | | 1000242-8 | FERRULE, ELEC COND |
| | | | | 199 | | | 1000243-23 | FERRULE, ELEC COND |
| | | | | 175 | | | 1000243-14 | FERRULE, ELEC COND |
| | | | | 1000 | | | 1000243-10 | FERRULE, ELEC COND |
| | | | | 703 | | | 1000243-8 | FERRULE, ELEC COND |
| SEE NOTE 1 | | | | 1 | | | | WIRE-ES-698A-SV2 22 AWG WHT, PVC, 1500 FT |
| | | | | 1 | | | | WIRE-ES-698A-SV2 24 AWG WHT, PVC, 2500 FT |
| | | | | 1 | | | | WIRE-ES-698A-SV2 20 AWG WHT, PVC, 500 FT |
| | | | | 1 | | | | WIRE-ES-698-SV2 16 AWG WHT, PVC, 500 FT |
| | | | | 1 | | | | WIRE-MIL-W-16878, TYPE "D" 4 AWG, WHT, PVC, 10 FT |
| | | | | 1 | | | | WIRE-MIL-W-16878, TYPE "B" 24 AWG, WHT, PVC, 1000 FT |
| | | | | 1 | | | | WIRE-MIL-W-16878, TYPE "B" 22 AWG, WHT, PVC, 2500 FT |
| | | | | 1 | | | | WIRE-MIL-W-16878, TYPE "B" 16 AWG, WHT, PVC, 500 FT |
| | | | | 1 | | | | WIRE-MIL-W-16878, TYPE "D" 12 AWG, WHT, PVC, 100 FT |
| | | | | 1 | | | | WIRE-MIL-W-16878, TYPE "D" 8 AWG, WHT, PVC, 50 FT |
| | | | | 1 | | | | WIRE-MIL-W-16878, TYPE "D" 6 AWG, WHT, PVC, 50 FT |
| | | | | 16 | | | 1900448 | CABLE CLAMP BRACKET ASSY |

LIST OF PARTS AND MATERIALS

Ⓜ REPLACED WITH CHANGE BY REV N

MASTER

| M | M |
|---|---|
| L | L |
| SHEET 1 | SHEET 2 |

REVISION STATUS OF SHEETS

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 00999 DATE 24 Apr 63

Ⓛ REPLACES REV K WITH CHANGE

| QUANTITY REQUIRED | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | 2 | | | MS3126F-24-61SZ | (1897048-614) CONNECTOR-PLUG, ELEC |
| | | | 3 | | | MS3126F-24-61SY | (1897048-613) CONNECTOR-PLUG, ELEC |
| | | | 8 | | | MS3126F-24-61SX | (1897048-612) CONNECTOR-PLUG, ELEC |
| | | | 8 | | | MS3126F-24-61SW | (1897048-611) CONNECTOR-PLUG, ELEC |
| | | | 10 | | | MS3126F-24-61S | (1897048-610) CONNECTOR-PLUG, ELEC |
| | | | - | | | MS3126F-22-55PY | CONNECTOR-PLUG, ELEC |
| | | | 1 | | | MS3126F-22-55PX | CONNECTOR-PLUG, ELEC |
| | | | 1 | | | MS3126F-22-55PW | (1897045-551) CONNECTOR-PLUG, ELEC |
| | | | 2 | | | MS3126F-22-55P | CONNECTOR-PLUG, ELEC |
| | | | - | | | MS3126F-22-21S | CONNECTOR-PLUG, ELEC |
| | | | - | | | MS3126F-22-21P | CONNECTOR-PLUG, ELEC |
| | | | 1 | | | MS3126F-20-41S | CONNECTOR-PLUG, ELEC |
| | | | 1 | | | MS3126F-20-41P | CONNECTOR-PLUG, ELEC |
| | | | 2 | | | MS3126F-20-16P | CONNECTOR-PLUG, ELEC |
| | | | 1 | | | MS3126F-16-8SW | CONNECTOR-PLUG, ELEC |
| | | | 11 | | | MS3126F-16-8S | CONNECTOR-PLUG, ELEC |
| | | | - | | | MS3126F-16-8P | CONNECTOR-PLUG, ELEC |
| | | | 2 | | | MS3126F-14-19S | CONNECTOR-PLUG, ELEC |
| | | | 1 | | | MS3126F-12-10SW | CONNECTOR-PLUG, ELEC |
| | | | 1 | | | MS3126F-12-10S | CONNECTOR-PLUG, ELEC |
| | | | 1 | | | MS3126F-12-10P | CONNECTOR-PLUG, ELEC |
| | | | - | | | MS3126F-12-3S | CONNECTOR-PLUG, ELEC |
| | | | - | | | MS3126F-12-3P | CONNECTOR-PLUG, ELEC |
| | | | - | | | MS3126F-10-6P | CONNECTOR-PLUG, ELEC |
| | | | - | | | MS3122E-22-55S | CONNECTOR-PLUG, ELEC |
| | | | - | | | MS3106E-32-6P | CONNECTOR-PLUG, ELEC |
| | | | 1 | | | MS3106A-18-1P | CONNECTOR-PLUG, ELEC |
| | | | - | | | MS3106E-22-5P | CONNECTOR-PLUG, ELEC |
| | | | 8 | | | 1015922-001 | CONNECTOR-PLUG, ELEC |
| | | | 1 | | | 1900351 | HARNESS FRAME MECHANICAL ASSY |

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900031 | | |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

| FRACTIONS | DECIMALS | ANGLES |
|---|---|---|
| ± — | ± — | ± — |

DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN

| | | DATE |
|---|---|---|
| DRAWN | A.J. FLUDER | 9 APR 63 |
| CHECKED | MALIKOWSKI | 10 APR 63 |
| APPROVAL | P.J. STIER | 10 APR 63 |
| APPROVAL | L Gellman | 12/16/63 |
| NASA APPROVAL | [illegible] | 12/17/63 |
| MIT APPROVAL | [illegible] | 17 Dec 63 |

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME AND HARNESS ASSEMBLY

| CODE IDENT NO. | SIZE | |
|---|---|---|
| | D | 1900064 |

SCALE — SHEET 1 OF 2

INCHES 0 1 2
PHOTOGRAPHIC SCALE ONLY

W 1900064 M

## REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
|---|---|---|---|---|---|
| (M) L | | REPLACES REV. K WITH CHANGE PER MXC 191495<br>REVISED PER TDR 05209 | | 27 NOV 63<br>12-17-63 | J J J J.E.G.<br>WK |
| M | | REPLACED WITH CHANGE BY REV. PER 192667<br>REVISED PER TDR 06846 | | 17 JAN 64 | HC RJJ<br>WK |

|  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|
| | | | | 1 | | | | LIST WIRE "AA" |
| | | | | 1 | | | 1900922 | "P" HARNESS |
| | | | | 1 | | | 1900751 | "N" HARNESS |
| | | | | 1 | | | 1900750 | "M" HARNESS |
| | | | | 1 | | | 1900749 | "L" HARNESS |
| | | | | 1 | | | 1900748 | "K" HARNESS |
| | | | | 1 | | | 1900747 | "J" HARNESS |
| | | | | 1 | | | 1900746 | "H" HARNESS |
| | | | | 1 | | | 1900745 | "G" HARNESS |
| | | | | 1 | | | 1900744 | "F" HARNESS |
| | | | | 1 | | | 1900743 | "E" HARNESS |
| | | | | 1 | | | 1900742 | "D" HARNESS |
| | | | | 1 | | | 1900741 | "C" HARNESS |
| | | | | 1 | | | MS3127E-22-55SY | CONNECTOR-RECEPTACLE |
| | | | | 1 | | | MS3127E-22-55SX | CONNECTOR-RECEPTACLE |
| | | | | 1 | | | MS3127E-22-55PZ | CONNECTOR-RECEPTACLE |
| | | | | 1 | | | MS3127E-22-55PY | CONNECTOR-RECEPTACLE |
| | | | | 1 | | | MS3127E-14-15S | CONNECTOR-RECEPTACLE |
| | | | | 1 | | | MS3127E-20-41PW | CONNECTOR-RECEPTACLE |
| | | | | 1 | | | MS3127E-20-41P | CONNECTOR-RECEPTACLE |
| | | | | 1 | | | MS3126F24-61PZ | (1897047-614) CONNECTOR, PLUG, ELEC |
| | | | | 24 | | | 1006783-23 | SCREW BUTTON HEX. SOC. |
| | | | | 24 | | | AN960-C6L | (1897006-036) WASHER, FLAT NO. 6 |
| | | | | 24 | | | AN363C632 | (1896990-261) NUT, SELF LOCKING |
| | | | | 6 | | | 1900368-005 | GASKET, CONNECTOR |
| | | | | 3 | | | 1900369 | GASKET, CONNECTOR |
| | | | | 1 | | | 1900365 | PANEL (INSEP) ASSEMBLY |
| | | | | 1 | | | 1016048-25 | TERMINAL LUG |
| SEE NOTE 3 | | | | 4 | | | 1015902-8 | TERMINAL LUG |
| | | | | 1 | | | | WIRE ND1002181 TYPE 1, CLASS 1 20AWG WHT 100 FT LONG |
| | | | | 20 | | | 1016006-003 | SPLICE REDUCER |
| | | | | 50 | | | 1016006-002 | SPLICE REDUCER |
| | | | | 20 | | | 1016006-001 | SPLICE REDUCER |
| | | | | 1 | | | MS3127E-22-55SW | CONNECTOR-RECEPTACLE, ELEC |
| | | | | 1 | | | MS3127E-22-55PX | CONNECTOR-RECEPTACLE, ELEC |
| | | | | 1 | | | MS3057A-10 | CLAMP-CABLE |
| | | | | 1 | | | MS3127E-20-41SW | CONNECTOR-RECEPTACLE |
| | | | | 1 | | | MS3126F-14-19P | CONNECTOR-PLUG |
| | | | | 39 | | | 1010490-200 | INSULATION-SLEEVING, ELEC |
| SEE NOTE 3 | | | | 49 | | | 1000242-015 | FERRULE-ELEC |
| | | | | 39 | | | 1000242-004 | FERRULE-ELEC |
| | | | | 39 | | | 1000243-003 | FERRULE-ELEC |
| | | | | 8 | | | 1015864-168 | INSULATION-SLEEVING, CLEAR |
| | | | | - | | | 1015864-250 | INSULATION-SLEEVING, CLEAR |
| | | | | - | | | 1015864-166 | INSULATION-SLEEVING, CLEAR |
| | | | | - | | | 1015864-164 | INSULATION-SLEEVING, CLEAR |
| | | | | 1 | | | MS3127E-22-55S | CONNECTOR-RECEPTACLE, ELEC |
| SEE NOTE 3 | | | | 107 | | | 1015902-3 | TERMINAL-LUG, RING TONGUE, CRIMP |
| | | | | - | | | 1015902-12 | TERMINAL-LUG, RING TONGUE, CRIMP |
| | | | | 400 | | | 1015966-003 | JACK-WIRE TIP (AWG 20) |
| | | | | 3166 | | | 1015966-001 | JACK-WIRE TIP (AWG 24-22) |
| | | | | 198 | | | 1000242-16 | FERRULE, ELEC. |
| | | | | 199 | | | 1000243-11 | FERRULE, ELEC |
| | | | | 198 | | | 1000243-15 | FERRULE, ELEC |
| | | | | 1 | | | MS3127E-16-8S | CONNECTOR-RECEPTACLE ELEC |
| | | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| | QUANTITY REQUIRED | | | | | | LIST OF PARTS AND MATERIALS | |

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 00999 DATE 24 apr 63

(M) REPLACED WITH CHANGE BY REV N

(L) REPLACES REV K WITH CHANGE

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900031 | | |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN A.J. FLUDER DATE 9 APR 63
CHECKED MALIKOWSKI 10 APR 63
APPROVAL P.G. STIER 10 APR 63
APPROVAL L Gedimay 12/16/63
NASA APPROVAL 12/17/63
MIT APPROVAL WlCuyla 17 Dec 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

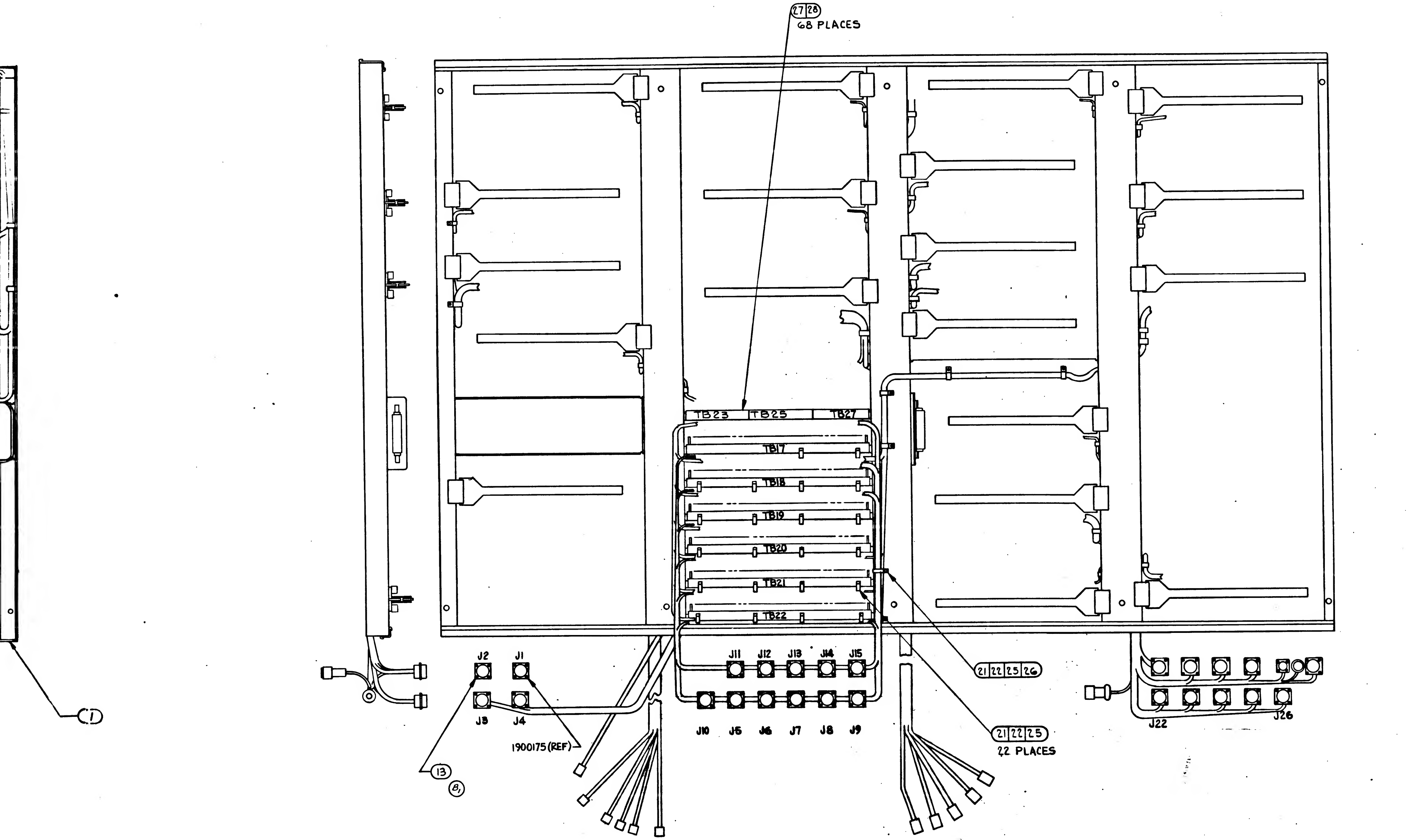
FRAME AND HARNESS ASSEMBLY

CODE IDENT NO. SIZE D 1900064
SCALE — SHEET 2 OF 2

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

MASTER

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| N | — | REPLACES REV.M WITH CHANGE PER CM 192667 | — | 20 JAN 64 | H.C. RJJ |
| P | — | CHANGED IN ACCORDANCE WITH CM 193684 PER TDRR [illegible] | — | 23 JAN 64 | HC R |



**Ⓝ REPLACES REV M WITH CHANGE**

| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | 68 | | 28 | MS35333-73 | WASHER, LOCK, FLAT, INTERNAL TOOTH |
| | | | 68 | | 27 | MS35233-43 | SCREW, PAN HD, SLOTTED |
| | | | 1 | | 26 | 1896990-011 | NUT, SELF LOCKING |
| | | | 50 | | 25 | 1897006-19 | WASHER, FLAT |
| | | | 13 | | 24 | 1901464-002 | SPACER |
| | | | 13 | | 23 | 1006783-048 | SCREW, BUTTON HD |
| | | | 37 | | 22 | 1006783-044 | SCREW, BUTTON HD |
| | | | 50 | | 21 | MS21919WDG-3 THRU-16 | CLAMP, CUSHIONED |
| | | | ~~3~~ | | ~~20~~ | ~~1900369~~ | ~~GASKET, CONNECTOR~~ |
| | | | ~~1~~ | | ~~19~~ | ~~1900365~~ | ~~PANEL ASSEMBLY (INSEP)~~ |
| | | | ~~24~~ | | ~~18~~ | ~~1006783-23~~ | ~~SCREW, BUTTON, HEX SOCKET~~ |
| | | | ~~24~~ | | ~~17~~ | ~~AN960-C6L~~ | ~~(1897006-036) WASHER, FLAT #6~~ |
| | | | ~~24~~ | | ~~16~~ | ~~AN363C632~~ | ~~(1896990-201) NUT, SELF LOCKING~~ |
| | | | ~~6~~ | | ~~15~~ | ~~1900368-005~~ | ~~GASKET, CONNECTOR~~ |
| | | | 1 | | 14 | | WIRE LIST AA |
| | | | 1 | | 13 | 1900742 | WIRING HARNESS D |
| | | | 1 | | 12 | 1900922 | WIRING HARNESS P |
| | | | 1 | | 11 | 1900751 | WIRING HARNESS N |
| | | | 1 | | 10 | 1900750 | WIRING HARNESS M |
| | | | 1 | | 9 | 1900749 | WIRING HARNESS L |
| | | | 1 | | 8 | 1900748 | WIRING HARNESS K |
| | | | 1 | | 7 | 1900747 | WIRING HARNESS J |
| | | | 1 | | 6 | 1900746 | WIRING HARNESS H |
| | | | 1 | | 5 | 1900745 | WIRING HARNESS G |
| | | | 1 | | 4 | 1900744 | WIRING HARNESS F |
| | | | 1 | | 3 | 1900743 | WIRING HARNESS E |
| | | | 1 | | 2 | 1900741 | WIRING HARNESS C |
| | | | 1 | | 1 | 1900943 | WIRING HARNESS & FRAME ASSY |

QUANTITY REQUIRED

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900031-011 | 1900004-011 | 011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Summerville DATE 9APR63
CHECKED C. Pajda 10APR63
APPROVAL G. Esi[illegible] 10APR63
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

FRAME AND
HARNESS ASSEMBLY

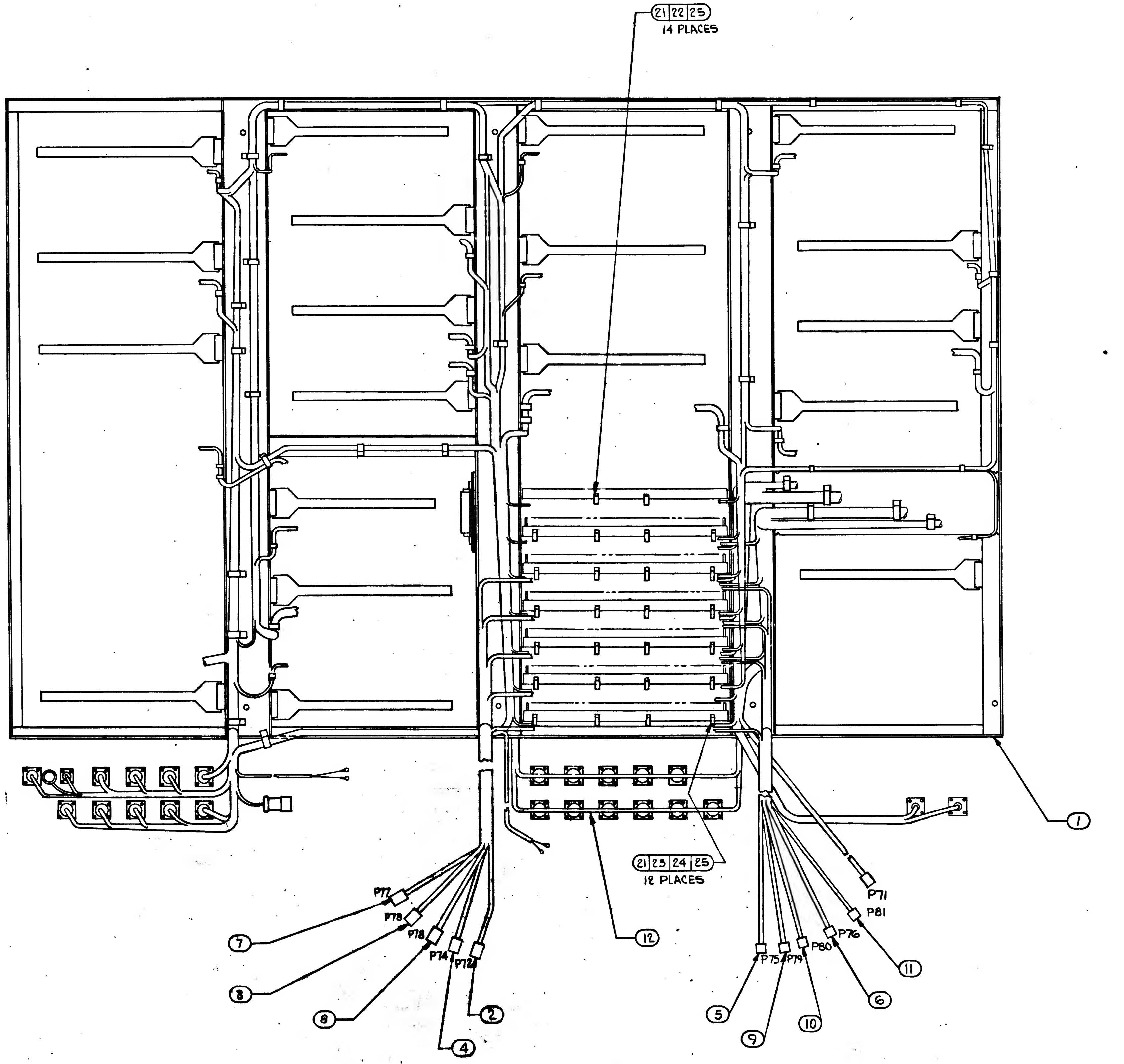
CODE IDENT NO
SIZE J2
1900064
SCALE —
SHEET OF

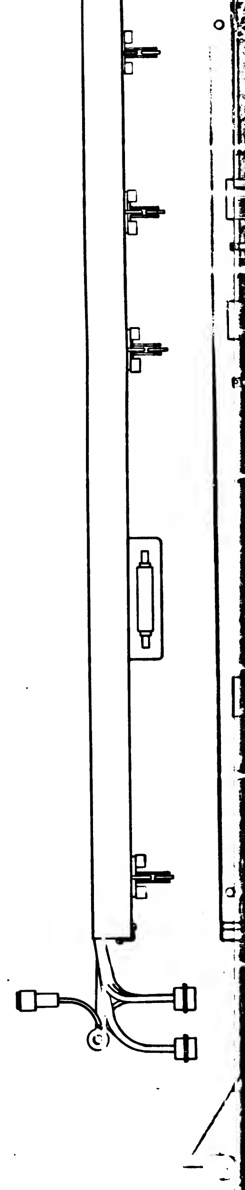
1900064
P

INCHES 0 1 2
PHOTOGRAPHIC SCALE ONLY

F-2

NOTES:
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.





1900064 P

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1▷ CONDUCTOR INSULATION COLORS SHALL BE WHITE WITH BLUE TRACER AND WHITE WITH RED TRACER. JACKET COLOR SHALL BE WHITE.

2▷ CONDUCTOR INSULATION COLORS SHALL BE WHITE WITH BLUE TRACER, WHITE WITH RED TRACER AND WHITE WITH YELLOW TRACER. JACKET COLOR SHALL BE WHITE.

PICTURE INCOMPLETE

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
|---|---|---|---|---|---|
| A | | Ⓐ CHANGE IN ACCORDANCE WITH MXC 186329 | MXC 186329 | 6 MAY 63 | FL / WD |
| A1 | | CHANGE IN ACCORDANCE WITH MXC 187110 | | 14 JUN 63 | |
| B | | CHANGE IN ACCORDANCE WITH MXC 187509 | | 25 JUN 63 | |
| C | | CHANGE IN ACCORDANCE WITH MXC 187431 | | 25 JUN 63 | |
| D | | CHANGE IN ACCORDANCE WITH MXC 188191 | | 31 JUL 63 | |
| D | | INCORPORATES CHANGES "A" THRU "D" PER TDRR 02573 | | 14 AUG 63 | WK. |

**FOR INFORMATION ONLY**

**CLASS B RELEASE TDR No.** 00999 **DATE** 24 Apr 63

| D | D |
|---|---|
| C | B |
| SHEET 1 | SHEET 2 |
| REVISION STATUS OF SHEETS | |

(LIST OF PARTS & MATERIAL CONTINUED ON SHEET 2)

| QUANTITY REQUIRED | | | | EFFECTIVITY | LIST OF PARTS AND MATERIALS | | |
|---|---|---|---|---|---|---|---|
| | | | 011 | | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| | | | 1 | | 65 | | COAX-MIL-C-17C RG 188 A/U, 500 FT |
| | | | 1 | | 64 | MS-3126F-24-61PY | ↑ ↑ ↑ |
| | | | 1 | | 63 | MS-3126F-24-61PX | |
| | | | 1 | | 62 | MS-3126F-24-61PW | |
| | | | 1 | | 61 | MS-3126F-24-61P | |
| | | | - | | 60 | MS-3126F-22-55SZ | |
| | | | 1 | | 59 | MS-3126F-22-55SY | |
| | | | - | | 58 | MS-3126F-22-55SX | |
| | | | - | | 57 | MS-3126F-22-55SW | |
| | | | - | | 56 | MS-3126F-22-55S | CONNECTOR-PLUG, ELEC |
| | | | 199 | | 55 | ↑ -18 | ↑ ↑ ↑ |
| | | | 176 | | 54 | -12 | |
| | | | 1000 | | 53 | -11 | |
| | | | 1000 | | 52 | 1000242-8 | |
| | | | 199 | | 51 | ↑ -23 | |
| | | | 176 | | 50 | -14 | |
| | | | 1000 | | 49 | -10 | |
| | | | 1000 | | 48 | 1000243-8 | FERRULE, ELEC COND |
| 1▷ | | | 1 | | 47 | | ↑ ↑ ↑ 22 AWG ↑ ↑ 1500 FT |
| 1▷ | | | 1 | | 46 | | 24 AWG 2500 FT |
| 1▷ | | | 1 | | 45 | | ES-698A-SV2 20 AWG 500 FT |
| 1▷ | | | 1 | | 44 | | ES-698-SV2 16 AWG 500 FT |
| | | | 1 | | 43 | | ↑ ↑ "D" 4 AWG 10 FT |
| | | | 1 | | 42 | | "B" 24 AWG 1000 FT |
| | | | 1 | | 41 | | "B" 22 AWG 2500 FT |
| | | | 1 | | 40 | | "B" 16 AWG 500 FT |
| | | | 1 | | 39 | | "D" 12 AWG 100 FT |
| | | | 1 | | 38 | | "D" 8 AWG 50 FT |
| | | | 1 | | 37 | | WIRE-MIL-W-16878, TYPE "D" 6 AWG, WHT, PVC, 50 FT |
| | | | 23 | | 36 | 1015800-001 | CABLE RETRACTOR |
| | | | 40 | | 35 | AN363-C-1032 | NUT-SELF-LOCKING |
| | | | 86 | | 34 | AN960-C10 | WASHER-FLAT |
| | | | 6 | | 33 | MS35338-81 | WASHER-LOCK |
| | | | 40 | | 32 | MS16996-11 | SCREW-CAP, SOCKET HEAD |
| | | | 6 | | 31 | MS16996-9 | SCREW-CAP, SOCKET HEAD |
| | | | 3 | | 30 | MS3126F-24-61SZ | ↑ ↑ ↑ |
| | | | 5 | | 29 | MS3126F-24-61SY | |
| | | | 10 | | 28 | MS3126F-24-61SX | |
| | | | 10 | | 27 | MS3126F-24-61SW | |
| | | | 12 | | 26 | MS3126F-24-61S | |
| | | | - | | 25 | MS3126F-22-55PY | |
| | | | 1 | | 24 | MS3126F-22-55PX | |
| | | | 2 | | 23 | MS3126F-22-55PW | |
| | | | 2 | | 22 | MS3126F-22-55P | |
| | | | - | | 21 | MS3126F-22-21S | CONNECTOR-PLUG, ELECTRICAL |

| QUANTITY REQUIRED | | | | EFFECTIVITY | LIST OF PARTS AND MATERIALS | | |
|---|---|---|---|---|---|---|---|
| | | | 011 | | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| | | | - | | 20 | MS3126F-22-21P | ↑ ↑ ↑ |
| | | | 1 | | 19 | MS3126F-20-41S | |
| | | | 1 | | 18 | MS3126F-20-41P | |
| | | | 2 | | 17 | MS3126F-20-16P | |
| | | | 1 | | 16 | MS3126F-16-8SW | |
| | | | 11 | | 15 | MS3126F-16-8S | |
| | | | - | | 14 | MS3126F-16-8P | |
| | | | 2 | | 13 | MS3126F-14-19S | |
| | | | 1 | | 12 | MS3126F-12-10SW | |
| | | | 1 | | 11 | MS3126F-12-10S | |
| | | | 1 | | 10 | MS3126F-12-10P | |
| | | | - | | 9 | MS3126F-12-3S | |
| | | | - | | 8 | MS3126F-12-3P | |
| | | | - | | 7 | MS3126F-10-6P | |
| | | | - | | 6 | MS3122E-22-55S | |
| | | | - | | 5 | MS3106E-32-6P | |
| | | | 1 | | 4 | MS3106A-18-1P | |
| | | | - | | 3 | MS3106E-22-5P | |
| | | | 10 | | 2 | 1015922-001 | CONNECTOR-PLUG, ELECTRICAL |
| | | | 1 | | 1 | | FRAME |

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900031 | | |
| APPLICATION | | |

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN A. J. Fuder DATE 9 APR 63
CHECKED Walt Ramsler 10 APR 63
APPROVAL 4 Apr 63
APPROVAL 10 APR 63
NASA APPROVAL 4-29-63
J P Helmuige
MIT APPROVAL 4 Apr 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME AND HARNESS ASSEMBLY

CODE IDENT NO.
SIZE D
1900064
SCALE —
SHEET 1 OF 2

INCHES 0 1 2
PHOTOGRAPHIC SCALE ONLY

1900064 D

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD |
|---|---|---|---|---|---|
| B | | CHANGE IN ACCORDANCE WITH MXC 187309 | | 25 JUN 63 | |
| D | | CHANGE IN ACCORDANCE WITH MXC 188191, TDRR 02573 | | 31 JUL 63 | |
| D | | TDRR 02573 | | 14 AUG 1963 | WAK |

## FOR INFORMATION ONLY

**CLASS B RELEASE TDR No.** 00999 **DATE** 24 April 63

| QUANTITY REQUIRED | | | | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | | | | LIST OF PARTS AND MATERIALS | |
| | | | 011 | | | | |
| | | | 1 | | 123 | MS3057A-10 | CLAMP-CABLE |
| | | | 1 | | 122 | MS3127E-20-41SW | CONNECTOR-RECEPTACLE |
| | | | 1 | | 121 | MS3126F-14-19P | CONNECTOR-PLUG |
| | | | 50 | | 120 | 1010490-200 | INSULATION-SLEEVING, ELEC. |
| | | | 50 | | 119 | 1000242-015 | ↑ |
| | | | 50 | | 118 | 1000242-004 | ↑ |
| | | | 50 | | 117 | 1000243-003 | FERRULE-ELEC. |
| | | | 8 | | 116 | ↑ -168 | ↑ |
| | | | - | | 115 | -250 | ↑ |
| | | | - | | 114 | -166 | ↑ |
| | | | - | | 113 | 1015864-164 | INSULATION-SLEEVING, CLEAR |
| | | | 1 | | 112 | MS3127E-22-55S | CONNECTOR-RECEPTACLE, ELEC. |
| | | | 107 | | 111 | 1015902-3 | ↑ |
| | | | - | | 110 | 1015902-12 | ↑ |
| | | | - | | 109 | 1015902-15 | TERMINAL-LUG, RING TONGUE, CRIMP |
| | | | 400 | | 108 | 1015966-003 | JACK-WIRE TIP (AWG 20) |
| | | | 4400 | | 107 | 1015966-001 | JACK-WIRE TIP (AWG 24-22) |
| | | | 400 | | 106 | 1015961-002 | MODULE-SIDE FEED 2 BUSS |
| | | | 200 | | 105 | 1015961-003 | MODULE-SIDE FEED 4 BUSS |
| | | | 198 | | 104 | 1000242-16 | ↑ |
| | | | 200 | | 103 | ↑ -11 | ↑ |
| | | | 198 | | 102 | 1000243-15 | FERRULE, ELEC. |
| | | | 1 | | 101 | MS3127E-20-41S | CONNECTOR-RECEPTACLE ELEC. |
| | | | 1 | | 100 | MS3127E-16-8S | CONNECTOR-RECEPTACLE ELEC. |
| | | | 1 | | 99 | | ES698A SV3 20AWG 200 FT. |
| | | | 1 | | 98 | | ES698A SV3 22AWG 200 FT. |
| | | | 1 | | 97 | ↑ -103 | ↑ |
| | | | 1 | | 96 | -102 | ↑ |
| | | | 1 | | 95 | -101 | ↑ |
| | | | 1 | | 94 | 1015906-100 | CONNECTOR-RECEPTACLE ELEC. |
| | | | 40 | | 93 | ↑ -31 | BODY-COAX OUTER, FEMALE |
| | | | 40 | | 92 | -11 | CONTACT-COAX PIN |
| | | | 150 | | 91 | -51 | RING-COAX CONNECTOR |
| | | | 110 | | 90 | -41 | BODY-COAX OUTER, MALE |
| | | | 110 | | 89 | 1015908-21 | SOCKET-COAX CONTACT |
| | | | 11 | | 88 | 1015905-61 | CLAMP-STRAIN RELIEF |
| | | | 200 | | 87 | 1000242-5 | FERRULE-ELEC. COND. |
| | | | 200 | | 86 | 1000243-6 | FERRULE-ELEC. COND. |

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

| QUANTITY REQUIRED | | | | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | | | | LIST OF MATERIALS OR PARTS LIST | |
| | | | 011 | | | | |
| | | | 1200 | | 85 | ↑ -198 | ↑ |
| | | | 2974 | | 84 | -196 | ↑ |
| | | | 372 | | 83 | 1010490-194 | INSULATION-SLEEVING |
| | | | 1 | | 82 | ↑ -24-61SY | ↑ |
| | | | 1 | | 81 | -24-61SX | ↑ |
| | | | 1 | | 80 | -24-61SW | ↑ |
| | | | 1 | | 79 | -24-61S | ↑ |
| | | | 1 | | 78 | -24-61PZ | ↑ |
| | | | 1 | | 77 | -24-61PY | ↑ |
| | | | 1 | | 76 | -24-61PX | ↑ |
| | | | 1 | | 75 | -24-61PW | ↑ |
| | | | 1 | | 74 | MS3127E-24-61P | CONNECTOR-RECEPTACLE |
| | | | 1 | | 73 | ↑ -104 | ↑ |
| | | | 1 | | 72 | -103 | ↑ |
| | | | 2 | | 71 | -102 | ↑ |
| | | | 3 | | 70 | -101 | ↑ |
| | | | 4 | | 69 | 1015907-100 | ↑ |
| | | | 1 | | 68 | ↑ -10-6S | ↑ |
| | | | 1 | | 67 | -20-41SW | ↑ |
| | | | 1 | | 66 | MS3126F-20-16S | CONNECTOR-PLUG, ELEC. |

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± — ± — ± —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-479

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 13 MAY 63 DATE
CHECKED 15 Jun 63
APPROVAL
APPROVAL 8/14/63
NASA APPROVAL 8-14-63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME AND HARNESS
ASSEMBLY

CODE IDENT NO.
SIZE D
1900064
SCALE —
SHEET 2 OF 2

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

H 1900064

## REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD |
|---|---|---|---|---|---|
| B | | CHANGE IN ACCORDANCE WITH MXC 187309 | | 25 JUN 63 | [illegible] |
| D | | CHANGE IN ACCORDANCE WITH MXC 188191, TDRR 02573 | | 31 JUL 63 | EF |
| | | TDRR 02573 | | 14 AUG 1963 | WKR |
| E | | CHANGE IN ACCORDANCE WITH MXC 188286 | | 28 AUG 63 | C.A.M. MEM |
| F | | CHANGE IN ACCORDANCE WITH MXC 188341 | | 29 AUG 63 | C.A.M. MEM |
| | | ADDED CUSTOMER DATA (Y7-63) | | 29 AUG 63 | C.A.M. MEM |
| G | | CHANGE IN ACCORDANCE WITH MXC 189021 | | 29 AUG 63 | C.A.M. MEM |
| H | | ADDED ITEM 142 THR 148 & ASSOC INFO., PER MXC-190824 PER TDRR 04416 | | 17 OCT 63 | MM 678 |
| | | | | 5 NOV 63 | WK |

## LIST OF PARTS AND MATERIALS

| QUANTITY REQUIRED 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|
| 1 | | 148 | MS3127E-22-55SY | ↑ |
| 1 | | 147 | MS3127E-22-55SX | |
| 1 | | 146 | MS3127E-22-55PZ | |
| 1 | | 145 | MS3127E-22-55PY | |
| 1 | | 144 | MS3127E-14-15S | |
| 1 | | 143 | MS3127E-20-41PW | |
| 1 | | 142 | MS3127E-20-41P | CONNECTOR RECEPTACLE |
| 1 | | 141 | MS3126F-24-61PZ | CONNECTOR-PLUG, ELECTRICAL |
| 24 | | 140 | 1006783-23 | SCREW, BUTTON. HEX. SOCKET |
| 24 | | 139 | AN960-C6L | WASHER, FLAT #6 |
| 24 | | 138 | AN363C632 | NUT. SELF LOCKING |
| 6 | | 137 | 1900368-005 | GASKET, CONNECTOR |
| 3 | | 136 | 1900369 | GASKET, CONNECTOR |
| 1 | | 135 | 1900365 | PANEL, ASSEMBLY (INSEP.) |
| 1 | | 134 | MS3127E-22-55P | CONNECTOR-RECPTACLE. ELEC. |

## LIST OF PARTS AND MATERIALS

| QUANTITY REQUIRED 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|
| 1 | | 133 | 1016048-25 | TERMINAL LUG |
| 4 | | 132 | 1015902-8 | TERMINAL LUG |
| 1 | | 131 | | WIRE ND 1002181 TYPE I CLASS I 20AWG WHITE 100FT.TL |
| 20 | | 130 | ↑ -003 | ↑ |
| 50 | | 129 | -002 | |
| 20 | | 128 | 1016006-001 | SPLICE REDUCER |
| 1 | | 127 | 1015906-104 | ↑ |
| 1 | | 126 | ↑ SW | |
| 1 | | 125 | PX | |
| 1 | | 124 | MS3127E-22-55PW | CONNECTOR-RECEPTACLE, ELEC. |
| 1 | | 123 | MS3057A-10 | CLAMP-CABLE |
| 1 | | 122 | MS3127E-20-41SW | CONNECTOR-RECEPTACLE |
| 1 | | 121 | MS3126F-14-19P | CONNECTOR-PLUG |
| 50 | | 120 | 1010490-200 | INSULATION-SLEEVING, ELEC. |
| 50 | | 119 | 1000242-015 | ↑ |
| 50 | | 118 | 1000242-004 | |
| 50 | | 117 | 1000243-003 | FERRULE-ELEC. |
| 8 | | 116 | ↑ -168 | ↑ |
| - | | 115 | -250 | |
| - | | 114 | -166 | |
| - | | 113 | 1015864-164 | INSULATION-SLEEVING, CLEAR |
| 1 | | 112 | MS3127E-22-55S | CONNECTOR-RECEPTACLE, ELEC. |
| 107 | | 111 | 1015902-3 | ↑ |
| - | | 110 | 1015902-12 | |
| - | | 109 | 1015902-15 | TERMINAL-LUG, RING TONGUE, CRIMP |
| 400 | | 108 | 1015966-003 | JACK-WIRE TIP (AWG 20) |
| 4400 | | 107 | 1015966-001 | JACK-WIRE TIP (AWG 24-22) |
| | | 106 | | |
| | | 105 | | |
| 198 | | 104 | 1000242-16 | ↑ |
| 200 | | 103 | ↑ -11 | |
| 198 | | 102 | 1000243-15 | FERRULE, ELEC. |
| 1 | | 101 | MS3127E-20-41S | CONNECTOR-RECEPTACLE ELEC. |
| 1 | | 100 | MS3127E-16-8S | CONNECTOR-RECEPTACLE ELEC. |
| 1 | | 99 | | ES698A SV3 20AWG 200 FT. |
| 1 | | 98 | | ES698A SV3 22AWG 200 FT. |
| 1 | | 97 | ↑ -103 | ↑ |
| 1 | | 96 | -102 | |
| 1 | | 95 | -101 | |
| 1 | | 94 | 1015906-100 | CONNECTOR-RECEPTACLE ELEC. |
| 50 | | 93 | ↑ -31 | BODY-COAX OUTER, FEMALE |
| 50 | | 92 | -11 | CONTACT-COAX PIN |
| 160 | | 91 | -51 | RING-COAX CONNECTOR |
| 110 | | 90 | -41 | BODY-COAX OUTER, MALE |
| 110 | | 89 | 1015908-21 | SOCKET-COAX CONTACT |
| 11 | | 88 | 1015905-61 | CLAMP-STRAIN RELIEF |
| 200 | | 87 | 1000242-5 | FERRULE-ELEC. COND. |
| 200 | | 86 | 1000243-6 | FERRULE-ELEC. COND. |

## LIST OF MATERIALS OR PARTS LIST

| QUANTITY REQUIRED 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|
| 1200 | | 85 | ↑ -198 | ↑ |
| 2974 | | 84 | -196 | |
| 372 | | 83 | 1010490-194 | INSULATION-SLEEVING |
| 1 | | 82 | ↑ -24-61SY | ↑ |
| 1 | | 81 | -24-61SX | |
| 1 | | 80 | -24-61SW | |
| 1 | | 79 | -24-61S | |
| 1 | | 78 | -24-61PZ | |
| 1 | | 77 | -24-61PY | |
| 1 | | 76 | -24-61PX | |
| 1 | | 75 | -24-61PW | |
| 1 | | 74 | MS3127E-24-61P | CONNECTOR-RECEPTACLE |
| 1 | | 73 | ↑ -104 | ↑ |
| 1 | | 72 | -103 | |
| 2 | | 71 | -102 | |
| 3 | | 70 | -101 | |
| 4 | | 69 | 1015907-100 | |
| 1 | | 68 | ↑ -10-6S | |
| 1 | | 67 | -20-41SW | |
| 1 | | 66 | MS3126F-20-16S | CONNECTOR-PLUG, ELEC. |

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 00999 DATE 24 April 63

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

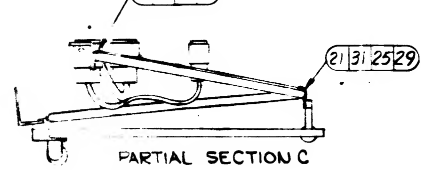
| | | |
|---|---|---|
| UNLESS OTHERWISE SPECIFIED<br>DIMENSIONS ARE IN INCHES<br>TOLERANCES ON<br>FRACTIONS ± —<br>DECIMALS ± —<br>ANGLES ± — | AC SPARK PLUG DIVISION, GMC<br>MILWAUKEE, WISCONSIN | MANNED SPACECRAFT CENTER<br>HOUSTON, TEXAS |
| | ACSP PN | |
| | DRAWN [illegible] DATE 13 MAY 63<br>CHECKED [illegible] 16 Jun 63 | FRAME AND HARNESS ASSEMBLY |
| | APPROVAL | |
| DO NOT SCALE THIS DRAWING | APPROVAL L. Geluman 8/19/63 | |
| MATERIAL | NASA APPROVAL [illegible] 8-19-63 | CODE IDENT NO. — SIZE D — 1900064 |
| CONTRACT NAS9-479 | MIT APPROVAL W [illegible] Aug 63 | SCALE — SHEET 2 OF 2 |

MASTER

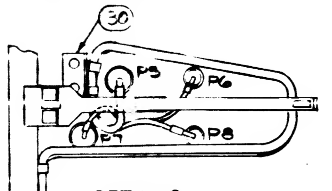
INCHES 0 1 2 PHOTOGRAPHIC SCALE ONLY

| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
|---|---|---|---|---|---|
| N | — | REPLACES REV M WITH CHANGE PER CM 192667 | — | 20 JAN 64 | H.C RJJ |
| P | — | CHANGED IN ACCORDANCE WITH CM 193684 PER TDRR | — | 23 JAN 64 | HC R |
| R | H16 | CHANGE IN ACCORDANCE WITH CM 195652 PER TDRR 08205 | — | 25 MAR 64 | GG |
| S | — | CHANGE IN ACCORDANCE WITH CM 196057 ADDED CUSTOMER DATA (V2-64<br>REVISED PER TDRR 08206 | | 14 APR 64 | J.G |

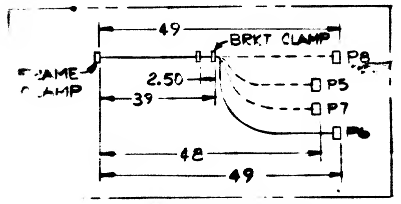
(H)



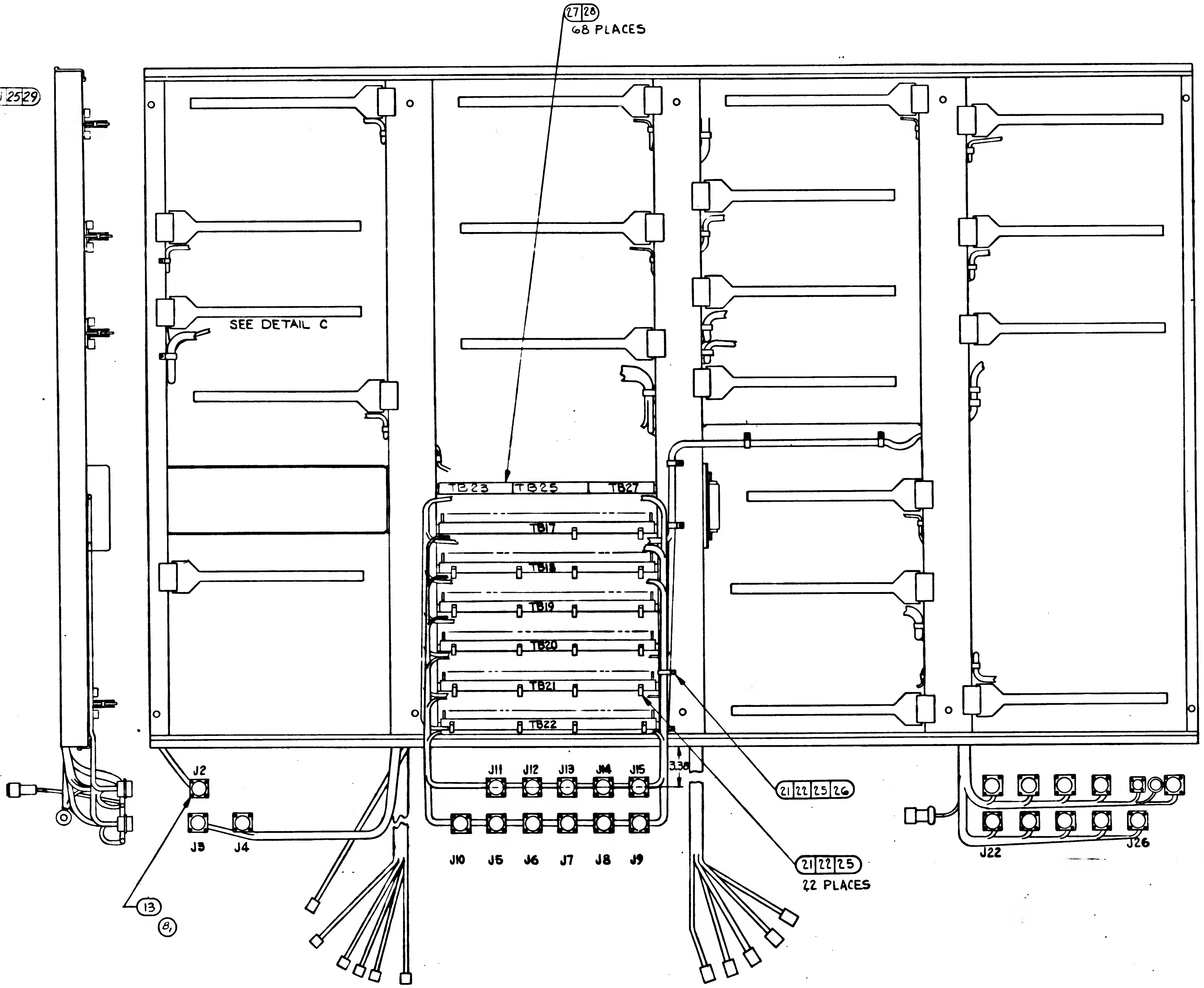
PARTIAL SECTION C



DETAIL C



LINE DIAGRAM C
(FOR DETAIL C)



SEE NOTE 3

SEE NOTE 3

1900064
S

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 1 | | 31 | 1006783-043 | SCREW BUTTON HD |
| | | | 1 | | 30 | 1900448-021 | CABLE CLAMP, BRACKET ASSY |
| | | | 1 | | 29 | MS35338-81 | WASHER, LOCK |
| | | | 68 | | 28 | MS35333-73 | WASHER, LOCK, FLAT, INTERNAL TOOTH |
| | | | 68 | | 27 | MS35233-43 | SCREW, PAN HD, SLOTTED |
| | | | 1 | | 26 | 1896990-011 | NUT, SELF LOCKING |
| | | | 50 | | 25 | 1897006-19 | WASHER, FLAT |
| | | | 13 | | 24 | 1901464-002 | SPACER |
| | | | 13 | | 23 | 1006783-048 | SCREW, BUTTON HD |
| | | | 37 | | 22 | 1006783-044 | SCREW, BUTTON HD |
| | | | 50 | | 21 | MS21919WDG-3 THRU-16 | CLAMP, CUSHIONED |
| | | | ~~3~~ | | ~~20~~ | ~~1900369~~ | ~~GASKET, CONNECTOR~~ |
| | | | ~~1~~ | | ~~19~~ | ~~1900365~~ | ~~PANEL ASSEMBLY (INSEP)~~ |
| | | | ~~24~~ | | ~~18~~ | ~~1006783-23~~ | ~~SCREW, BUTTON, HEX SOCKET~~ |
| | | | ~~24~~ | | ~~17~~ | ~~AN960-C6L~~ | ~~(1897006-036) WASHER, FLAT #6~~ |
| | | | ~~24~~ | | ~~16~~ | ~~AN363C632~~ | ~~(1896990-201) NUT, SELF LOCKING~~ |
| | | | ~~6~~ | | ~~15~~ | ~~1900368-005~~ | ~~GASKET, CONNECTOR~~ |
| | | | 1 | | 14 | | WIRE LIST AA |
| | | | 1 | | 13 | 1900742 | WIRING HARNESS D |
| | | | 1 | | 12 | 1900922 | WIRING HARNESS P |
| | | | 1 | | 11 | 1900751 | WIRING HARNESS N |
| | | | 1 | | 10 | 1900750 | WIRING HARNESS M |
| | | | 1 | | 9 | 1900749 | WIRING HARNESS L |
| | | | 1 | | 8 | 1900748 | WIRING HARNESS K |
| | | | 1 | | 7 | 1900747 | WIRING HARNESS J |
| | | | 1 | | 6 | 1900746 | WIRING HARNESS H |
| | | | 1 | | 5 | 1900745 | WIRING HARNESS G |
| | | | 1 | | 4 | 1900744 | WIRING HARNESS F |
| | | | 1 | | 3 | 1900743 | WIRING HARNESS E |
| | | | 1 | | 2 | 1900741 | WIRING HARNESS C |
| | | | 1 | | 1 | 1900943 | WIRING HARNESS B / FRAME ASSY |
| | | | 011 | EFFECTIVITY | ITEM NO | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| QUANTITY REQUIRED | | | | | LIST OF PARTS AND MATERIALS | | |

Ⓝ REPLACES REV M WITH CHANGE

| NEXT ASSY | USED ON | APPLICABLE DASH NO |
|---|---|---|
| 1900031-011 | 1900004-011 | 011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± — ± — ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE WISCONSIN
ACSP PN
DRAWN Summerville DATE 9APR63
CHECKED C. Pegda 10APR63
APPROVAL 10APR63
APPROVAL 3/4/64
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

FRAME AND
HARNESS ASSEMBLY

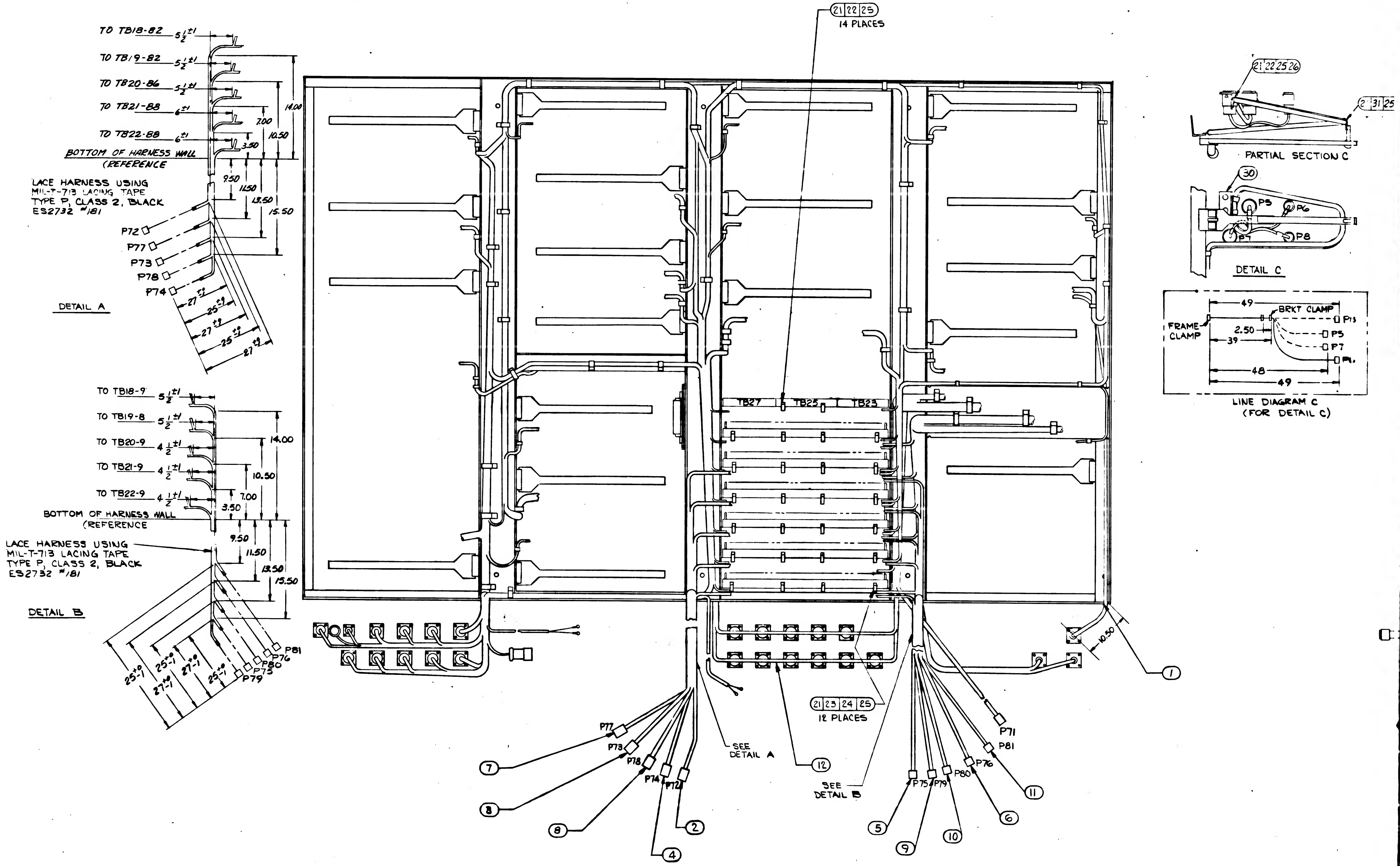
CODE IDENT NO
SIZE J2
1900064
SCALE —
SHEET 1 OF

1900064

27-1900064

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. ELECTRICAL REQUIREMENTS:
   A CONTINUITY TEST-MEASURE $0^{+1}_{-0}$ OHMS BETWEEN TERMINAL POINTS OF EACH CONDUCTOR
3. VENDOR ITEM-SEE SPECIFICATION CONTROL DRAWING



| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |

**FOR INFORMATION ONLY**

**CLASS B RELEASE TDR No.** 00999 **DATE** 24 Apr 63

PICTURE INCOMPLETE

| QUANTITY REQUIRED | | | | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | 011 | | | | |
| | | | 1 | | | | ↑ ↑ ↑ 22AWG ↑ ↑ 2500FT |
| | | | 1 | | | | 16 AWG 500FT |
| | | | 1 | | | | 12 AWG 100FT |
| | | | 1 | | | | 8 AWG 50FT |
| | | | 1 | | | | WIRE-MIL-W-16878, TYPE "B" 6 AWG, WHT, PVC. 50FT |
| | | | 23 | | | 1015800-001 | CABLE RETRACTOR |
| | | | 40 | | | AN363-C-1032 | NUT-SELF-LOCKING |
| | | | 86 | | | AN960-C10 | WASHER-FLAT |
| | | | 6 | | | MS35338-81 | WASHER-LOCK |
| | | | 40 | | | MS16996-11 | SCREW-CAP, SOCKET HEAD |
| | | | 6 | | | MS16996-9 | SCREW-CAP, SOCKET HEAD |
| | | | 2 | | | MS3126F-24-61SZ | ↑ ↑ ↑ |
| | | | 2 | | | MS3126F-24-61SY | |
| | | | 2 | | | MS3126F-24-61SX | |
| | | | 2 | | | MS3126F-24-61SW | |
| | | | 2 | | | MS3126F-24-61S | |
| | | | 1 | | | MS3126F-22-55PY | |
| | | | 1 | | | MS3126F-22-55PX | |
| | | | 2 | | | MS3126F-22-55PW | |
| | | | 2 | | | MS3126F-22-55P | |
| | | | 1 | | | MS3126F-22-21S | CONNECTOR-PLUG, ELECTRICAL |

LIST OF PARTS AND MATERIALS

| QUANTITY REQUIRED | | | | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | 011 | | | | |
| | | | 1 | | | MS3126F-22-21P | ↑ ↑ ↑ |
| | | | 3 | | | MS3126F-20-41S | |
| | | | 2 | | | MS3126F-20-41P | |
| | | | 2 | | | MS3126F-20-16P | |
| | | | 4 | | | MS3126F-16-8SW | |
| | | | 15 | | | MS3126F-16-8S | |
| | | | 1 | | | MS3126F-16-8P | |
| | | | 1 | | | MS3126F-14-19S | |
| | | | 1 | | | MS3126F-12-10SW | |
| | | | 1 | | | MS3126F-12-10S | |
| | | | 1 | | | MS3126F-12-10P | |
| | | | 1 | | | MS3126F-12-3S | |
| | | | 1 | | | MS3126F-12-3P | |
| | | | 1 | | | MS3126F-10-6P | |
| | | | 1 | | | MS3122E-22-55S | |
| | | | 1 | | | MS3106E-28-22P | |
| | | | 1 | | | MS3106E-24-22S | |
| | | | 1 | | | MS3106E-22-5P | |
| | | | 18 | | | UG-260-C/U | CONNECTOR-PLUG, ELECTRICAL |
| | | | 1 | | | | FRAME |

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900031 | | |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — − —
DECIMALS + — − —
ANGLES + — − —

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

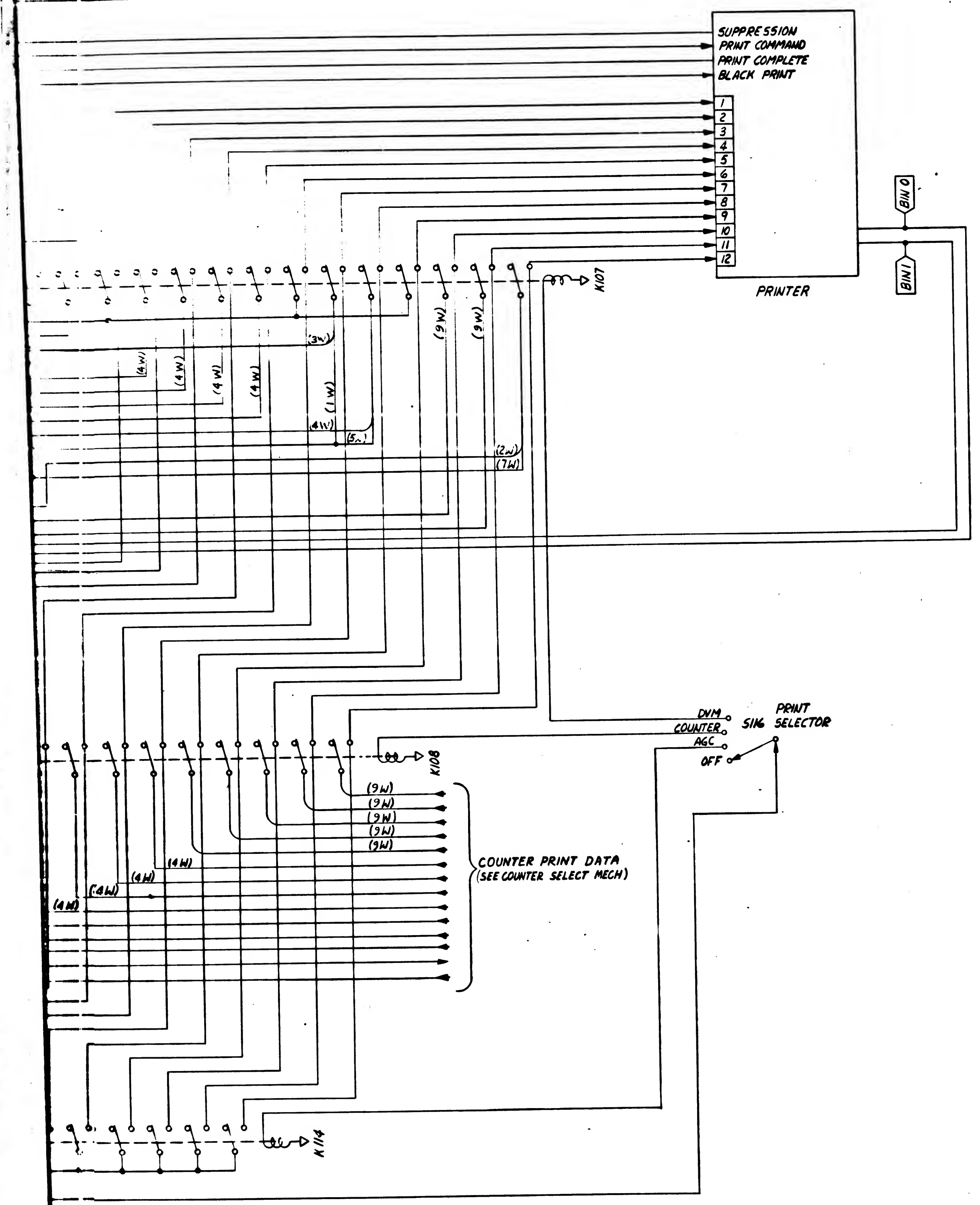
DRAWN A. J. Fudore DATE 9-APR-63
CHECKED Walt Ransler 9 APR 63
APPROVAL 4/10/63
APPROVAL 10 APR 63
NASA APPROVAL 4/10/63
J P Helmige 4-24-63
MIT APPROVAL 24 Apr 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

FRAME AND HARNESS
ASSEMBLY

CODE IDENT NO.
SIZE D
1900064
SCALE —
SHEET

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY



**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 00996 DATE 24 Apr 63

| PRINTER COL | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DVM-BLACK | SIGNAL 1 OR 2 DIGIT (1-2) | X-BAR TENS DIGIT (0-9) | X-BAR UNITS DIGIT (0-9) | BLANK | DECIMAL POINT DIGIT (1,2,3,4) | SYMBOL (+,-,AC,*) | BLANK | LSD-4 READOUT (0-9) | LSD-3 READOUT (0-9) | LSD-2 READOUT (0-9) | LSD-1 READOUT (0-9) | BLANK |
| COUNTER-RED | SIGNAL CODE TENS (0-4) | SIGNAL CODE UNITS (0-9) | SIGNAL CODE TENS (1,2) | SIGNAL CODE UNITS (0-9) | FUNCTION (1-7) | SYMBOL (+,-) | LSD-6 READOUT (0-9) | LSD-5 READOUT (0-9) | LSD-4 READOUT (0-9) | LSD-3 READOUT (0-9) | LSD-2 READOUT (0-9) | LSD-1 READOUT (0-9) |
| AGC-RED | BLANK | BLANK | BLANK | BLANK | BLANK | BLANK | SIGNAL CODE (0-9) | DATA 5 OCTAL (0-7) | DATA 4 OCTAL (0-7) | DATA 3 OCTAL (0-7) | DATA 2 OCTAL (0-7) | DATA 1 OCTAL (0-7) |
| BIT CODE | DEC | DEC | DEC | DEC | DEC | BCD | BCD | BCD | BCD | BCD | BCD | BCD |

| REVISIONS | | | | |
|---|---|---|---|---|
| SYM ZONE | DESCRIPTION | CHG NO. | DATE | APPD |

NEXT ASSY | USED ON
APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN L Sommer DATE 5 APR 63
CHECKED 2 APR 63
APPROVAL 12 APR 63
APPROVAL 18 APR 63
NASA APPROVAL 4-24 63
MIT APPROVAL 24 Apr 63

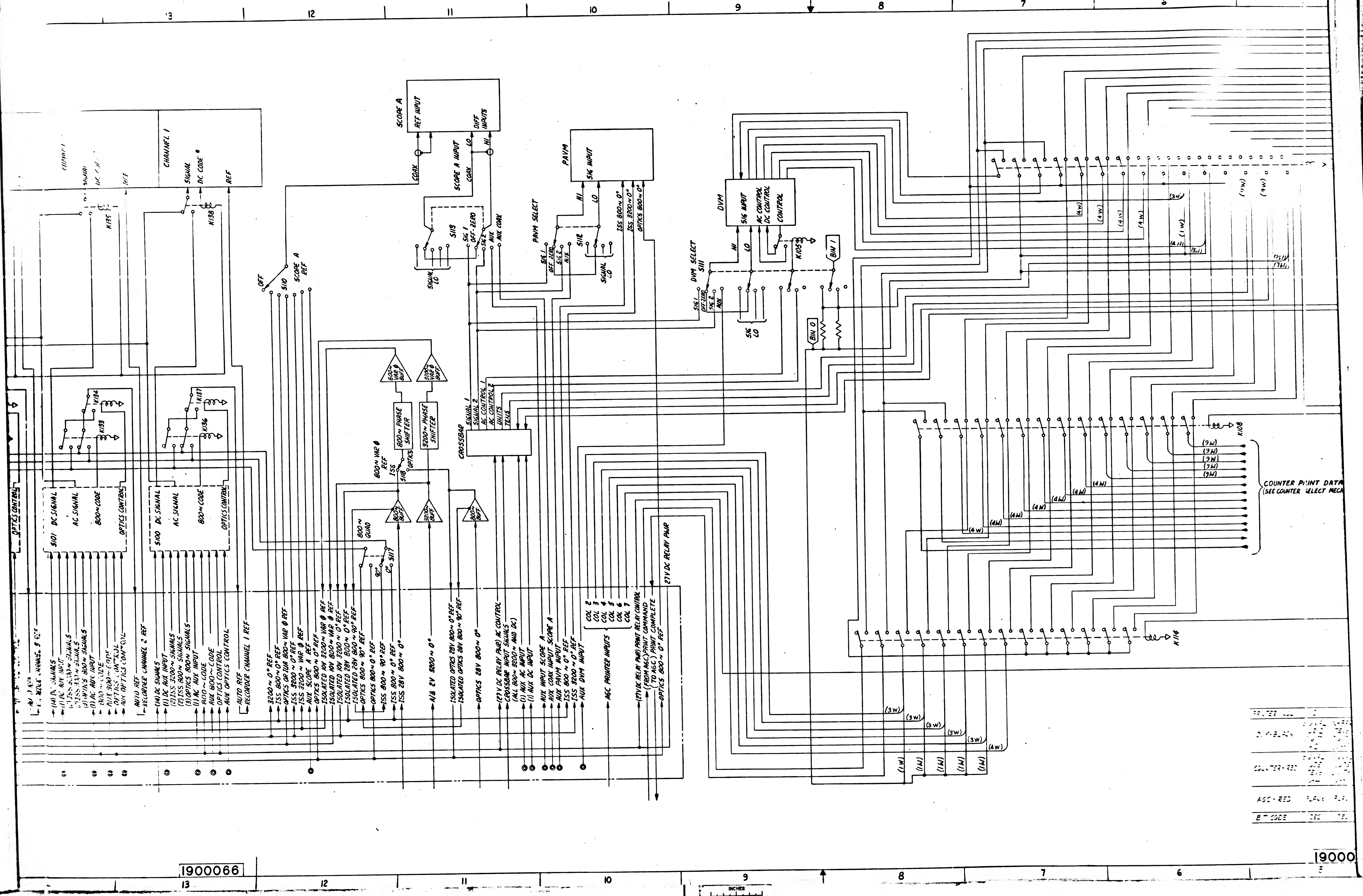
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

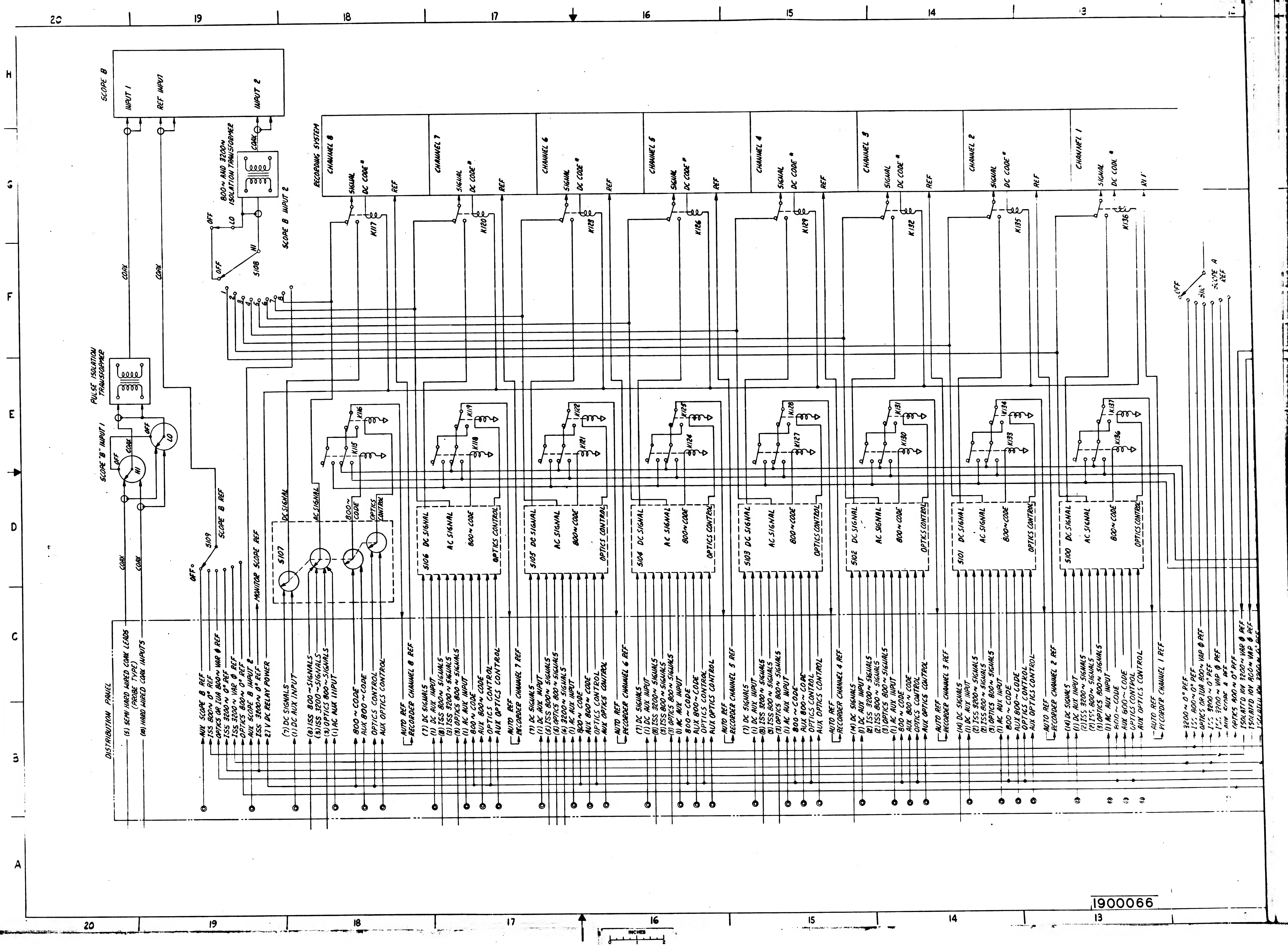
AGE-GSE SIGNAL SELECTION
MECHANIZATION DIAGRAM

CODE IDENT NO. SIZE J2 1900066
SCALE — SHEET

1900066

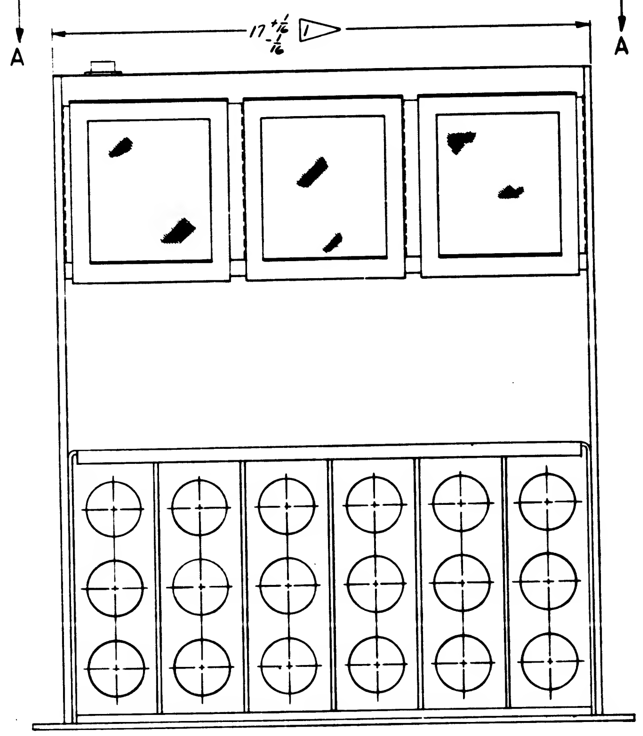
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

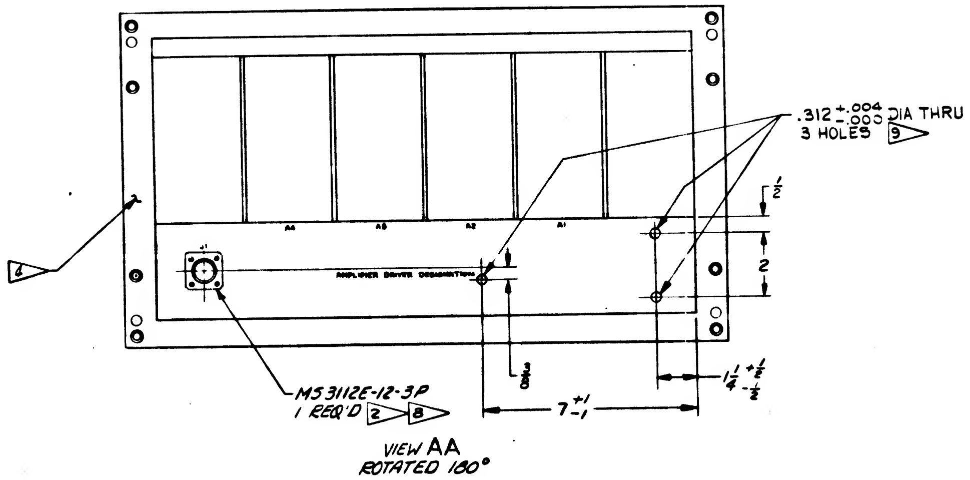
13
12
11
10
9
8
7
6
CHANNEL 1
SIGNAL
DC CODE *
REF
K135
K138
K134
K133
K137
K136
OPTICS CONTROL
S101 DC SIGNAL
AC SIGNAL
800~ CODE
OPTICS CONTROL
S100 DC SIGNAL
AC SIGNAL
800~ CODE
OPTICS CONTROL
OFF
S110
SCOPE A REF
SCOPE A
REF INPUT
DIFF INPUTS
COAX
SCOPE A INPUT COAX
LO
HI
S113
SIG 1
OFF-ZERO
SIG 2
AUX
AUX COAX
SIGNAL LO
PAVM
SIG INPUT
HI
LO
ISS 800~ 0°
ISS 3200~ 0°
OPTICS 800~ 0°
PAVM SELECT
SIG 1
OFF ZERO
SIG 2
AUX
S112
SIGNAL LO
DVM
SIG INPUT
AC CONTROL
DC CONTROL
CONTROL
HI
LO
K105
BIN 1
DVM SELECT S111
SIG 1
OFF ZERO
SIG 2
AUX
SIG LO
BIN 0
(3W)
(4W)
(4W)
(4W)
(4W)
(1W)
(4W)
(5W)
(9W)
(9W)
(2W)
(7W)
600~ VAR Ø BUFF
3200~ VAR Ø BUFF
800~ PHASE SHIFTER
3200~ PHASE SHIFTER
800~ VAR Ø REF
ISS
OPTICS
S118
800~ BUFF
3200~ BUFF
800~ BUFF
800~ QUAD
90°
0°
S117
CROSSBAR
SIGNAL 1
SIGNAL 2
AC CONTROL 1
AC CONTROL 2
UNITS
TENS
K108
(9W)
(9W)
(9W)
(9W)
(9W)
(4W)
(4W)
(4W)
(4W)
(4W)
(4W)
(4W)
COUNTER PRINT DATA
(SEE COUNTER SELECT MECH
K114
27V DC RELAY PWR
(3W)
(3W)
(3W)
(3W)
(3W)
(4W)
(1W)
(1W)
(1W)
(1W)
(1W)
(1W)
AUTO REF
RECORDER CHANNEL 3 REF
(14) DC SIGNALS
(1) DC AUX INPUT
(2) ISS 3200~ SIGNALS
(2) ISS 800~ SIGNALS
(3) OPTICS 800~ SIGNALS
(1) AC AUX INPUT
800~ CODE
AUX 800~ CODE
OPTICS CONTROL
AUX OPTICS CONTROL
AUTO REF
RECORDER CHANNEL 2 REF
(14) DC SIGNALS
(1) DC AUX INPUT
(2) ISS 3200~ SIGNALS
(2) ISS 800~ SIGNALS
(3) OPTICS 800~ SIGNALS
(1) AC AUX INPUT
800~ CODE
AUX 800~ CODE
OPTICS CONTROL
AUX OPTICS CONTROL
AUTO REF
RECORDER CHANNEL 1 REF
3200~ 0° REF
ISS 800~ 0° REF
OPTICS OR IUA 800~ VAR Ø REF
ISS 3200~ 0° REF
ISS 3200~ VAR Ø REF
AUX SCOPE A REF
OPTICS 800~ 0° REF
ISOLATED 10V 3200~ VAR Ø REF
ISOLATED 10V 800~ VAR Ø REF
ISOLATED 10V 3200~ 0° REF
ISOLATED 28V 800~ 0° REF
ISOLATED 28V 800~ 90° REF
OPTICS 800~ 90° REF
OPTICS 800~ 0° REF
ISS 800~ 90° REF
ISS 800~ 0° REF
ISS 28V 800~ 0°
A/B 2V 3200~ 0°
ISOLATED OPTICS 28V 800~ 0° REF
ISOLATED OPTICS 28V 800~ 90° REF
OPTICS 28V 800~ 0°
(27V DC RELAY PWR) AC CONTROL
CROSSBAR INPUT SIGNALS
(ALL 800~ 3200~ AND DC)
(1) AUX AC INPUT
(1) AUX DC INPUT
AUX INPUT SCOPE A
AUX COAX INPUT SCOPE A
AUX PAVM INPUT
ISS 800~ 0° REF
ISS 3200~ 0° REF
AUX DVM INPUT
COL 2
COL 3
COL 4
COL 5
COL 6
COL 7
AGC PRINTER INPUTS
(27V DC RELAY PWR) PRINT RELAY CONTROL
(FROM AGC) PRINT COMMAND
(TO AGC) PRINT COMPLETE
OPTICS 800~ 0° REF
PRINTER
DVM-BLACK
COUNTER-RED
AGC-RED
BIT CODE
1900066
19000
INCHES
PHOTOGRAPHIC SCALE ONLY


SCOPE B
INPUT 1
REF INPUT
INPUT 2
800~ AND 3200~ ISOLATION TRANSFORMER
COAX
SCOPE B INPUT 2
OFF
LO
HI
S108
PULSE ISOLATION TRANSFORMER
SCOPE "B" INPUT 1
RECORDING SYSTEM
CHANNEL 8
CHANNEL 7
CHANNEL 6
CHANNEL 5
CHANNEL 4
CHANNEL 3
CHANNEL 2
CHANNEL 1
SIGNAL
DC CODE *
REF
K117
K120
K123
K126
K129
K132
K135
K138
K116
K115
K119
K118
K122
K121
K125
K124
K128
K127
K131
K130
K134
K133
K137
K136
SCOPE A REF
S109
SCOPE B REF
MONITOR SCOPE REF
S107
DC SIGNAL
AC SIGNAL
800~ CODE
OPTICS CONTROL
S106
S105
S104
S103
S102
S101
S100
800~CODE
DISTRIBUTION PANEL
(5) SEMI HARD WIRED COAX LEADS (PROBE TYPE)
(10) HARD WIRED COAX INPUTS
AUX SCOPE B REF
ISS 800~ 0° REF
OPTICS OR IUA 800~ VAR Ø REF
ISS 3200~ VAR Ø REF
OPTICS 800~ 0° REF
AUX SCOPE B INPUT 2
ISS 3200~ 0° REF
27 V DC RELAY POWER
(7) DC SIGNALS
(1) DC AUX INPUT
(8) ISS 800~SIGNALS
(3) ISS 3200~SIGNALS
(3) OPTICS 800~SIGNALS
(1) AC AUX INPUT
800~CODE
AUX 800~CODE
OPTICS CONTROL
AUX OPTICS CONTROL
AUTO REF
RECORDER CHANNEL 8 REF
RECORDER CHANNEL 7 REF
RECORDER CHANNEL 6 REF
RECORDER CHANNEL 5 REF
RECORDER CHANNEL 4 REF
RECORDER CHANNEL 3 REF
RECORDER CHANNEL 2 REF
RECORDER CHANNEL 1 REF
3200~ 0° REF
ISS 800~ 0° REF
OPTICS OR IUA 800~ VAR Ø REF
AUX SCOPE A REF
OPTICS 800~ 0° REF
ISOLATED 10V 3200~ VAR Ø REF
ISOLATED 10V 800~ VAR Ø REF
20
19
18
17
16
15
14
13
H
G
F
E
D
C
B
A
INCHES
PHOTOGRAPHIC SCALE ONLY

1900066

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| A | | [illegible] MATERIAL | | 63 | |



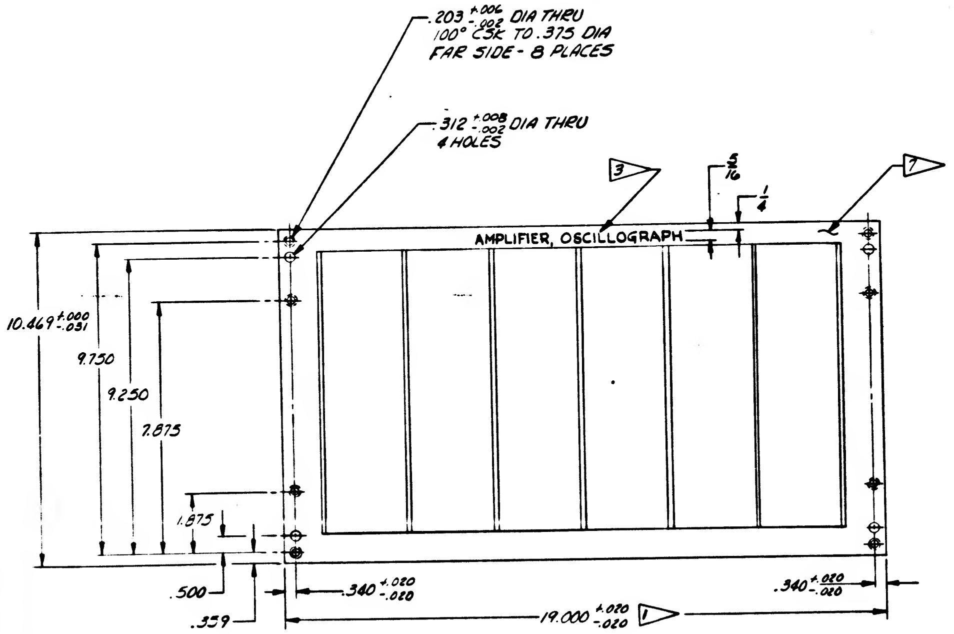


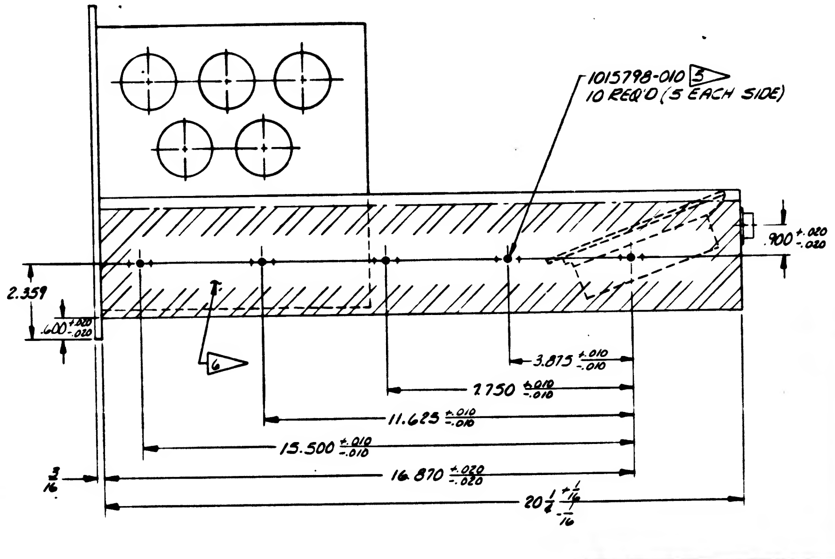
.312 +.004 -.000 DIA THRU
3 HOLES 9
6
A4
A3
A2
A1
AMPLIFIER DRAWER DESIGNATION
1/2
2
MS3112E-12-3P
1 REQ'D 2 8
$7\,^{+1}_{-1}$
$1\frac{1}{4}\,^{+1/4}_{-1/4}$

VIEW AA
ROTATED 180°

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. C1209 DATE 8 May 63





1900067

| QUANTITY REQUIRED | | | | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | 011 | | 1 | TEF | RACK OSCILLOGRAPH [illegible] |

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900070-011 | 1900024 | |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

| FRACTIONS | DECIMALS | ANGLES |
|---|---|---|
| $+\frac{1}{64}$ $-\frac{1}{64}$ | +.005 -.005 | +2° -2° |

DO NOT SCALE THIS DRAWING

MATERIAL ———

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE WISCONSIN

ACSP PN

DRAWN A. J. Fluder DATE 2 APR 63
CHECKED 23 APR 63
APPROVAL Apr 23, 1963
APPROVAL 23 Apr 63
NASA APPROVAL 5/8/63
5/8/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RACK OSCILLOGRAPH

| CODE IDENT NO | SIZE | |
|---|---|---|
| | E | 1900067 |
| SCALE 1:2 | | SHEET |

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| - | | MODEL NO. NAS 53+850A | | [illegible] 63 | [illegible] |

REQUIREMENTS:

1> 19 AND 17 INCH DIMENSIONS OF PANEL AND CHASSIS SHALL BE CENTRALIZED WITHIN .020 AT ASSEMBLY. SIDES OF CHASSIS LOCATED BY 17 INCH DIMENSION SHALL BE PARALLEL WITHIN .031 AND PERPENDICULAR TO REAR SURFACE OF FRONT PANEL WITHIN .062.

2> EXACT CONNECTOR LOCATION ON REAR OF ASSEMBLY SHALL BE DETERMINED BY SUPPLIER.

3> FRONT PANEL CHARACTERS (FUTURA DEMIBOLD) CHARACTER HEIGHT $\frac{1}{8}$ EXCEPT WHERE OTHERWISE SPECIFIED. SILK SCREEN PER ND1002019 USING ENAMEL, SEMI-GLOSS, INSTRUMENT BLACK, COLOR 514 OF ANA 157. CENTRALIZE AS SHOWN. CHARACTER HEIGHTS ELSEWHERE ON THE UNIT SHALL BE $\frac{1}{8}{}^{+\frac{1}{16}}_{-0}$. LETTERING SHALL BE LEGIBLY APPLIED BY ANY SUITABLE MEANS.

4> BORDER AREAS, WITHIN $\frac{9}{16}$ INCH OF THE PANEL EDGE, ON THE REAR SURFACE OF THE FRONT PANEL SHALL BE CO-PLANER AND FREE OF PROTRUSIONS.

5> MOUNT NUT 1015798-010 FROM THE INSIDE OF THE CHASSIS. ALLOW $\frac{3}{8}$ INCH SCREW CLEARANCE AT EACH NUT FROM THE INSIDE SURFACE OF THE CHASSIS.

6> THERE SHALL BE NO PROTRUSIONS OUTSIDE OF THE CHASSIS IN THIS AREA.

7> FRONT PANEL FINISH: APPLY FINISH P513 OF SPECIFICATION MIL-F-14072. PRIME AND FINISH COATS TO BE APPLIED TO PANEL FRONT AND EDGES ONLY. APPLY 2 COATS OF TT-E-529A, CLASS B ENAMEL, SEMI-GLOSS, LIGHT GRAY, COLOR 26440 OF FED-STD-595.
NOTE: MIL-P-8585 PRIMER SUPERSEDES MIL-P-6889.

THE REAR SURFACE OF THE FRONT PANEL SHALL BE PROTECTED FROM CORROSION BY CADIMUM PLATE PER QQ-P-416.

ALL OUTSIDE SURFACES MUST BE FREE FROM BURRS AND SHARP EDGES.

8> PIN LIST FOR CONNECTOR MS3112-12-3P (J1)

| INTERNAL CONNECTION | | PIN LETTER |
|---|---|---|
| 115 V, 60 CPS | Hi | A |
| | | B |
| 115 V, 60 CPS | Lo | C |

THE EQUIPMENT SHALL BE DESIGNED TO MEET THE ENVIRONMENTAL REQUIREMENTS OF ND-

9> ALLOW $\frac{1}{2}$ INCH CLEARANCE BEHIND EACH HOLE.

DATA SOURCE:
MASSA DIVISION
HINGHAM, MASS
MODEL BSA-860 A

FOR INFORMATION ONLY
CLASS B RELEASE TDR No. 01209 DATE 8 May 63

| | |
|---|---|
| 1900070-011 | 1900004 |
| NEXT ASSY | USED ON |
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — − — DECIMALS + — − — ANGLES + — − —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN A. J. Fluder DATE 12 APR 63
CHECKED 23 APR 63
APPROVAL Apr 23, 1963
APPROVAL 23 APR 63
NASA APPROVAL 5/8/63
Lester Bekman 5/8/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

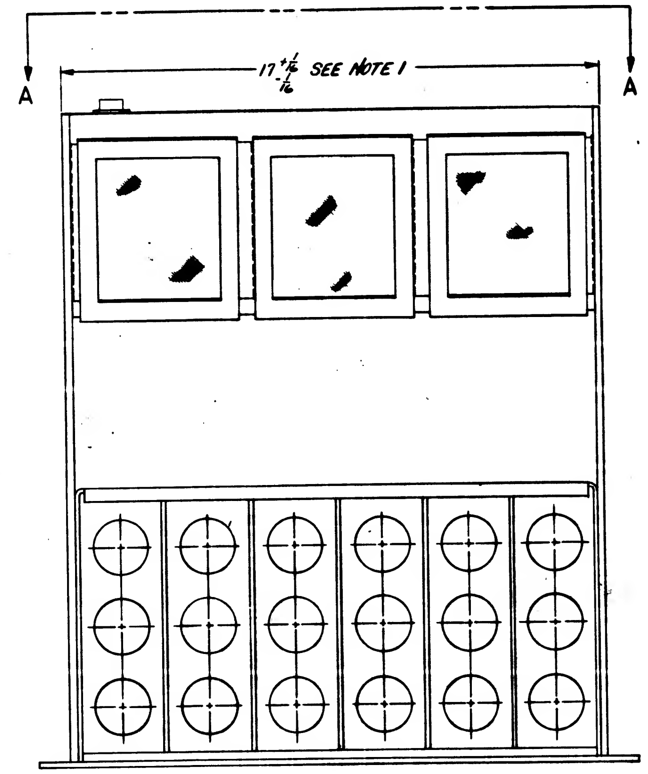
RACK, OSCILLOGRAPH

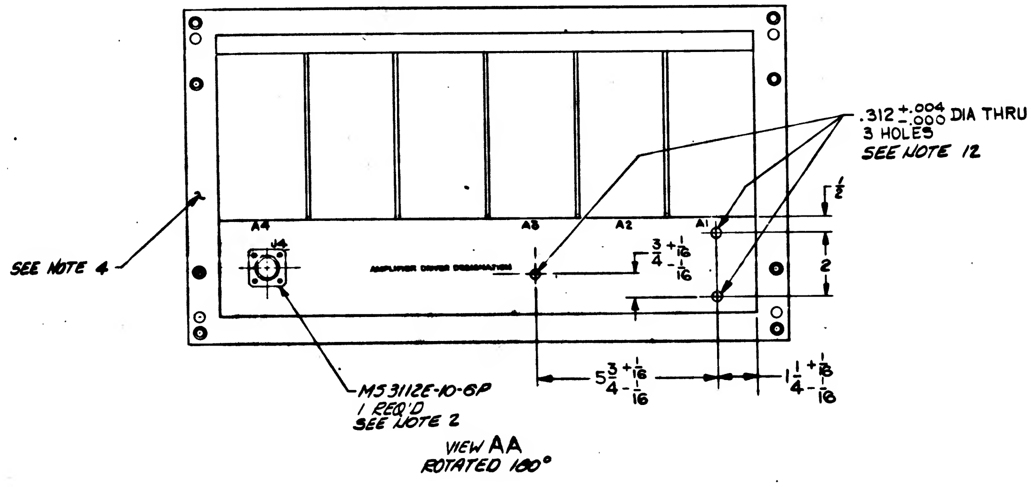
CODE IDENT NO
SIZE E
1900067
SCALE 1:2
SHEET 2 OF 2

INCHES 0 1 2
PHOTOGRAPHIC SCALE ONLY

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
|---|---|---|---|---|---|
| A | | ADDED ITEM [illegible] OF MATERIAL. PER MXC 186912 | | [illegible] 63 | WR |
| A1 | | CHANGE IN ACCORDANCE WITH MXC 186917 | | 17 JUN 63 | [illegible] |
| B | | CHANGE IN ACCORDANCE WITH MXC 19C289 PER TDRR 04712 | | 2? SEP 63 | [illegible] |

(M)

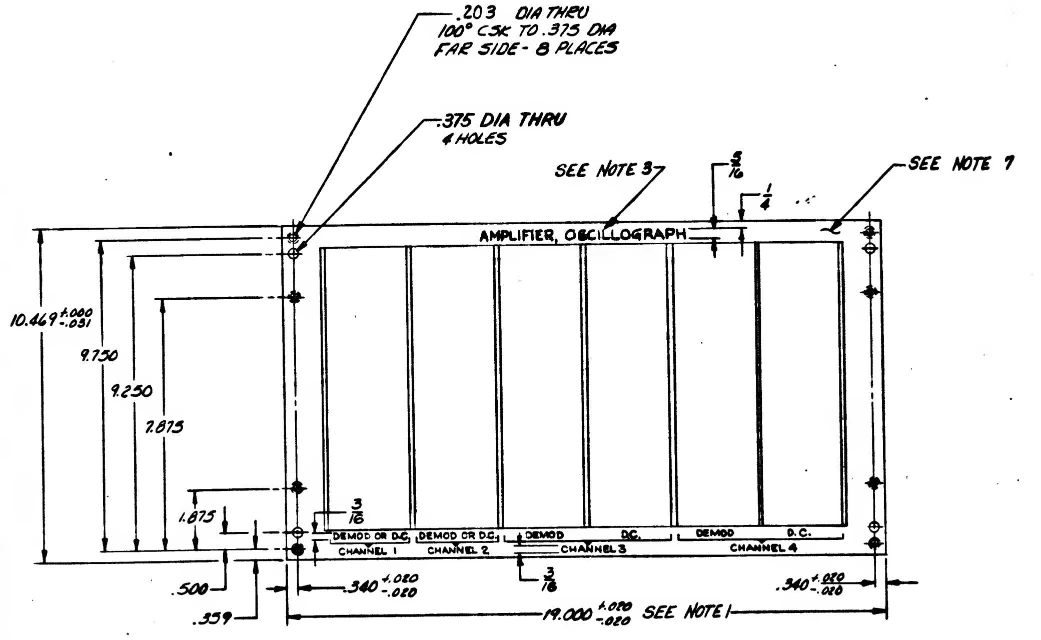




VIEW AA
ROTATED 180°

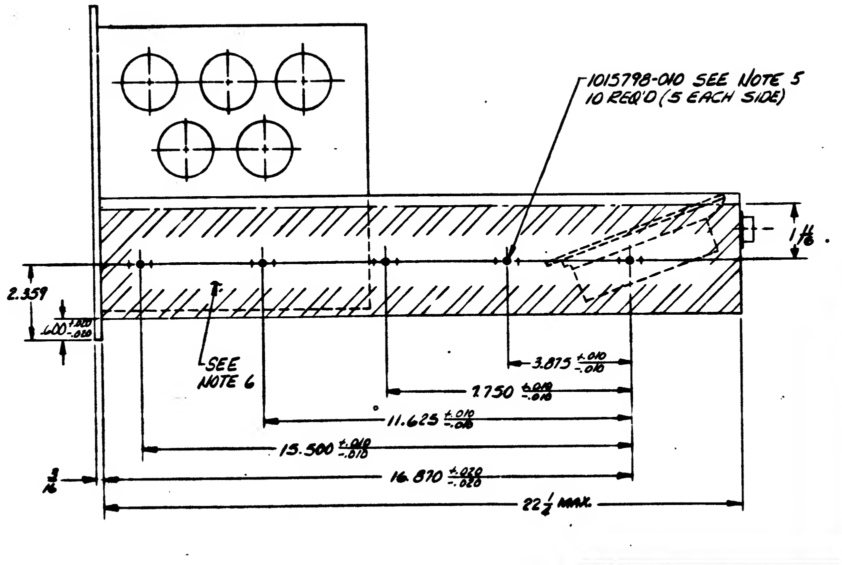
# FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 01709 DATE 8 May 63



| B | B |
|---|---|
| SHEET 1 | SHEET 2 |

REVISION STATUS OF SHEETS



| QUANTITY REQUIRED 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|
| | | 1 | TBA | RACK, OSCILLOGRAPH (MODEL [illegible]) |

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900070-011 | 1900000 | |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ±.005 ANGLES ±2°
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN A. J. Kuder DATE 12 APR 63
CHECKED [illegible] 23 APR 63
APPROVAL R. Kahn Apr 23, 1963
APPROVAL [illegible] 23 Apr 63
NASA APPROVAL [illegible] 5/8/63
[illegible] 5/8/63
MIT APPROVAL [illegible] 8 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RACK, OSCILLOGRAPH

CODE IDENT NO.
SIZE E
1900067
SCALE 1:2
SHEET 2 OF 2

1900067 B

INCHES
PHOTOGRAPHIC SCALE ONLY

REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
|---|---|---|---|---|---|
| ⓜ | | MODEL NO. MAS BSA-850A PER MXC 186912 | | 63 | WR |
| A1 | | CHANGE IN ACCORDANCE WITH MXC 186817 | | 7 JN 63 | JEC / ARS |
| B | | CHANGE IN ACCORDANCE WITH MCX 190289 PER TDRR 04712 | | -3 | P.F |

REQUIREMENTS:

1 19 AND 17 INCH DIMENSIONS OF PANEL AND CHASSIS SHALL BE CENTRALIZED WITHIN .020 AT ASSEMBLY. SIDES OF CHASSIS LOCATED BY 17 INCH DIMENSION SHALL BE PARALLEL WITHIN .031 AND PERPENDICULAR TO REAR SURFACE OF FRONT PANEL WITHIN .062.

2 EXACT CONNECTOR LOCATION ON REAR OF ASSEMBLY SHALL BE DETERMINED BY SUPPLIER.

3 FRONT PANEL CHARACTERS: FRONT PANEL CHARACTERS PER ND-1002122, CHARACTER HEIGHT $\frac{1}{8}$ EXCEPT WHERE OTHERWISE SPECIFIED. SILK SCREEN PER ND1002019 USING ENAMEL, SEMI-GLOSS, INSTRUMENT BLACK, COLOR 514 OF ANA 157. CENTRALIZE AS SHOWN. CHARACTER HEIGHT ELSEWHERE ON THE UNIT SHALL BE $\frac{1}{8}{}^{+\frac{1}{16}}_{-0}$. LETTERING SHALL BE APPLIED PER ND 1002019.

4 BORDER AREAS, WITHIN $\frac{9}{16}$ INCH OF THE PANEL EDGE, ON THE REAR SURFACE OF THE FRONT PANEL SHALL BE CO-PLANER AND FREE OF PROTRUSIONS.

5 MOUNT NUT 1015798-010 FROM THE INSIDE OF THE CHASSIS. ALLOW $\frac{3}{8}$ INCH SCREW CLEARANCE AT EACH NUT FROM THE INSIDE SURFACE OF THE CHASSIS.

6 THERE SHALL BE NO PROTRUSIONS OUTSIDE OF THE CHASSIS IN THIS AREA.

7 FRONT PANEL FINISH-CADMIUM PLATE BOTH SURFACES AND ALL EDGES PER QQ-P-416A, TYPE 3, CLASS I. PRIME WITH MIL-C-15328, COATING PER MIL-C-8507. PRIME AND FINISH COATS TO BE APPLIED TO PANEL FRONT AND EDGES ONLY. FINISH PAINT TO BE 2 COATS OF TT-E-529, CLASS B ENAMEL, SEMI-GLOSS, LIGHT GRAY, COLOR 26440 OF FED. STD 595.
NOTE: MIL-P-8585 PRIMER SUPERSEDES MIL-P-6889.

8 THE REAR SURFACE OF THE FRONT PANEL SHALL BE PROTECTED FROM CORROSION BY CADIMUM PLATE PER QQ-P-416.

9 ALL OUTSIDE SURFACES MUST BE FREE FROM BURRS AND SHARP EDGES.

10 FRONT PANEL MATERIAL—STEEL PER QQ-S-636

11 INTERPRET DRAWING IN ACCORDANCE WITH THE STANDARDS PERSCRIBED BY MIL-D-70327

12 ALLOW $\frac{1}{2}$ INCH CLEARANCE BEHIND EACH HOLE.

DATA SOURCE:
MASSA DIVISION
HINGHAM, MASS
MODEL AR-600

**FOR INFORMATION ONLY**
CLASS B RELEASE TDR No. 01209 DATE 8 May 63

| | |
|---|---|
| 1900070-011 | 1900000 |
| NEXT ASSY | USED ON |
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN A. J. Fuller DATE 12 APR 63
CHECKED 23 APR 63
APPROVAL Apr 23, 1963
APPROVAL 23 APR 63
NASA APPROVAL Lester 5/8/63
MIT APPROVAL May 63

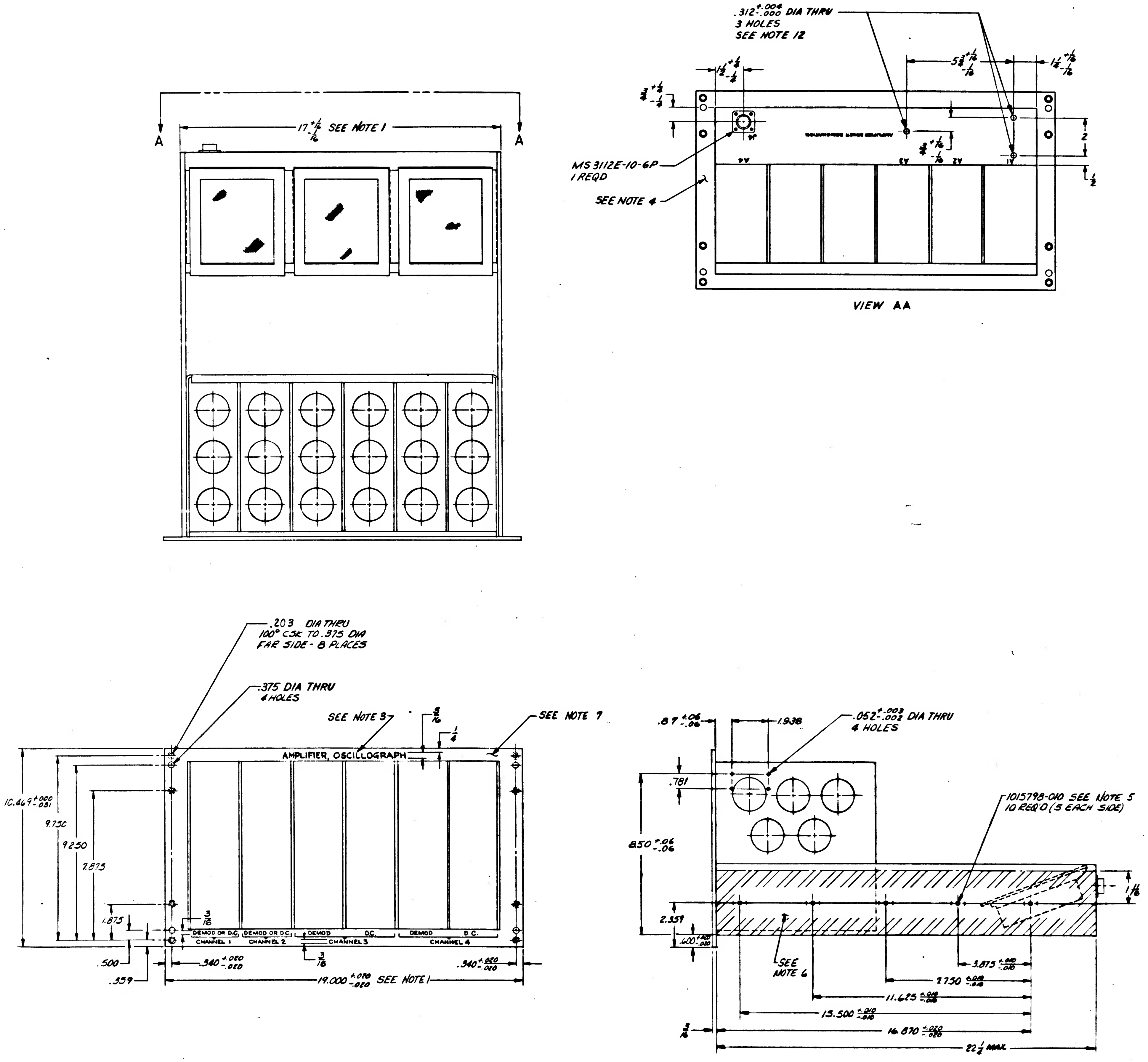
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RACK, OSCILLOGRAPH

CODE IDENT NO.
SIZE E
1900067
SCALE 1:2
SHEET 2 OF 2

1900067 B

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| A | | ADDED ITEM [illegible] MATERIAL PER MXC 186912 | | 63 | |
| A1 | | CHANGE IN ACCORDANCE WITH MXC 186917 | | 17 JUN 63 | JEL<br>KARS |
| 3 | | CHANGE IN ACCORDANCE WITH MXC 190289 PER TDRR 04712 | | 27 SEP 63<br>14 NOV 63 | PF |
| C | | CHANGE IN ACCORDANCE WITH MXC·192077 PER TDRR 08219 | | 11 DEC 63 | RH<br>JEL |



FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 6209 DATE 8 May 63

| | |
|---|---|
| C | C |
| B | B |
| SHEET 1 | SHEET 2 |
| REVISION STATUS OF SHEETS | |

| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | | | 1 | TEA | RACK, OSCILLOGRAPH (MODEL ESA-860) |
| QUANTITY REQUIRED | | | | | LIST OF PARTS AND MATERIALS | | |

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900070-011 | 1900000 | |
| APPLICATION | | |

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS +1/64 -1/64
DECIMALS +.005 -.005
ANGLES +2° -2°
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN A. J. Fludere DATE 2 APR 63
CHECKED 23 APR 63
APPROVAL Apr 23 1963
APPROVAL 23 Apr 63
NASA APPROVAL 5/8/63
Lester Gedman 5/8/63
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

RACK, OSCILLOGRAPH

CODE IDENT NO
SIZE E
1900067
SCALE 1:2
SHEET 2 OF 2

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| - | | MODEL NO. NAS 55A-850A<br>PER MXC 186912 | | MAY 3 | W.C |
| A1 | | CHANGE IN ACCORDANCE WITH MXC 186817 | | 7 JUN 63 | JEL<br>ARS |
| B | | CHANGE IN ACCORDANCE WITH MCX 190289 PER TDRR 04712 | | 27 SEP 63<br>10 NOV 63 | R<br>P.F |
| C | | CHANGE IN ACCORDANCE WITH MXC-192077 PER TDRR 08819 | | 11 DEC 63 | RM<br>JEL |

REQUIREMENTS:

1 19 AND 17 INCH DIMENSIONS OF PANEL AND CHASSIS SHALL BE CENTRALIZED WITHIN .020 AT ASSEMBLY. SIDES OF CHASSIS LOCATED BY 17 INCH DIMENSION SHALL BE PARALLEL WITHIN .031 AND PERPENDICULAR TO REAR SURFACE OF FRONT PANEL WITHIN .062.

2

3 FRONT PANEL CHARACTERS: FRONT PANEL CHARACTERS PER ND-1002122, CHARACTER HEIGHT $\frac{1}{8}$ EXCEPT WHERE OTHERWISE SPECIFIED. SILK SCREEN PER ND1002019 USING ENAMEL, SEMI-GLOSS, INSTRUMENT BLACK, COLOR 514 OF ANA 157. CENTRALIZE AS SHOWN. CHARACTER HEIGHT ELSEWHERE ON THE UNIT SHALL BE $\frac{1}{8}{}^{+\frac{1}{16}}_{-0}$. LETTERING SHALL BE APPLIED PER ND 1002019.

4 BORDER AREAS, WITHIN $\frac{9}{16}$ INCH OF THE PANEL EDGE, ON THE REAR SURFACE OF THE FRONT PANEL SHALL BE CO-PLANER AND FREE OF PROTRUSIONS.

5 MOUNT NUT 1015798-010 FROM THE INSIDE OF THE CHASSIS. ALLOW $\frac{3}{8}$ INCH SCREW CLEARANCE AT EACH NUT FROM THE INSIDE SURFACE OF THE CHASSIS.

6 THERE SHALL BE NO PROTRUSIONS OUTSIDE OF THE CHASSIS IN THIS AREA.

7 FRONT PANEL FINISH-CADMIUM PLATE BOTH SURFACES AND ALL EDGES PER QQ-P-416A, TYPE 3, CLASS I. PRIME WITH MIL-C-15328, COATING PER MIL-C-8507. PRIME AND FINISH COATS TO BE APPLIED TO PANEL FRONT AND EDGES ONLY. FINISH PAINT TO BE 2 COATS OF TT-E-529, CLASS B ENAMEL, SEMI-GLOSS, LIGHT GRAY, COLOR 26440 OF FED. STD 595.
NOTE: MIL-P-8585 PRIMER SUPERSEDES MIL-P-6889.

8 THE REAR SURFACE OF THE FRONT PANEL SHALL BE PROTECTED FROM CORROSION BY CADIMUM PLATE PER QQ-P-416.

9 ALL OUTSIDE SURFACES MUST BE FREE FROM BURRS AND SHARP EDGES.

10 FRONT PANEL MATERIAL — STEEL PER QQ-S-636

11 INTERPRET DRAWING IN ACCORDANCE WITH THE STANDARDS PERSCRIBED BY MIL-D-70327

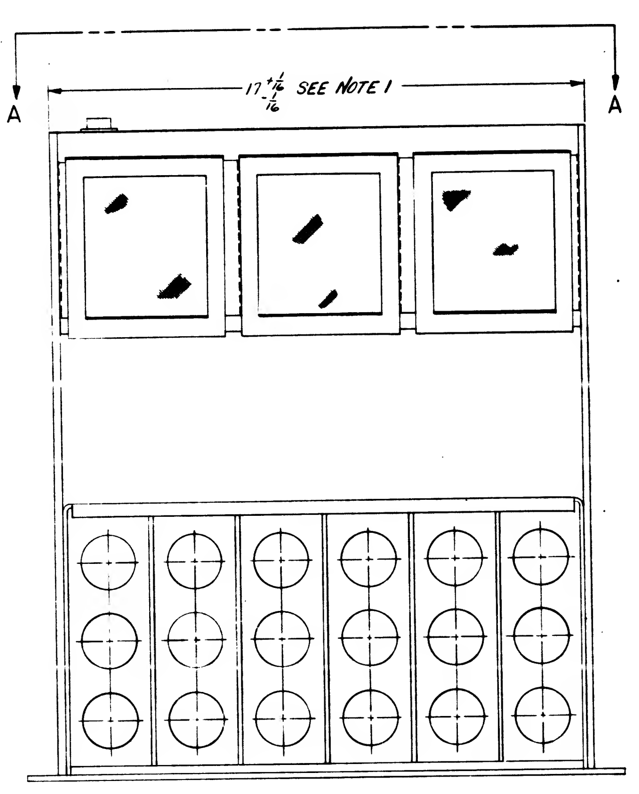
12 ALLOW $\frac{1}{2}$ INCH CLEARANCE BEHIND EACH HOLE.

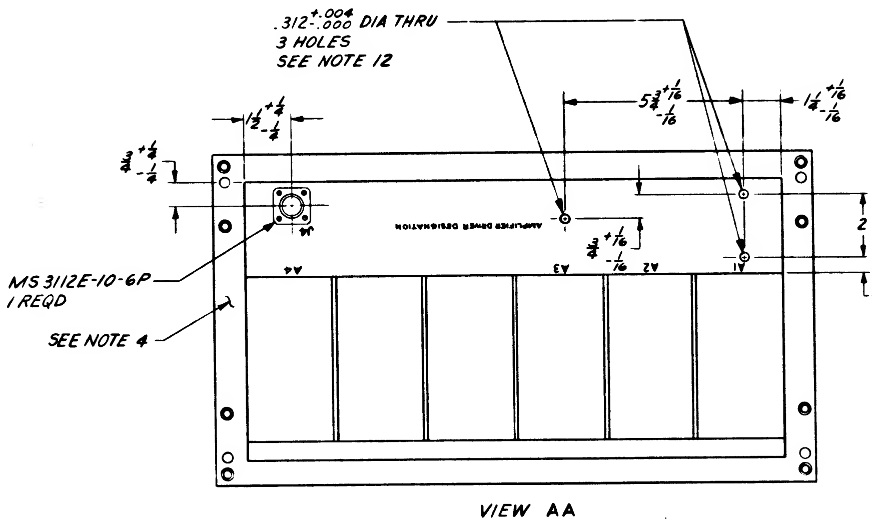
DATA SOURCE:
MASSA DIVISION
HINGHAM, MASS
MODEL AR-600

**FOR INFORMATION ONLY**
CLASS B RELEASE TDR No. 01209 DATE 8 May 63

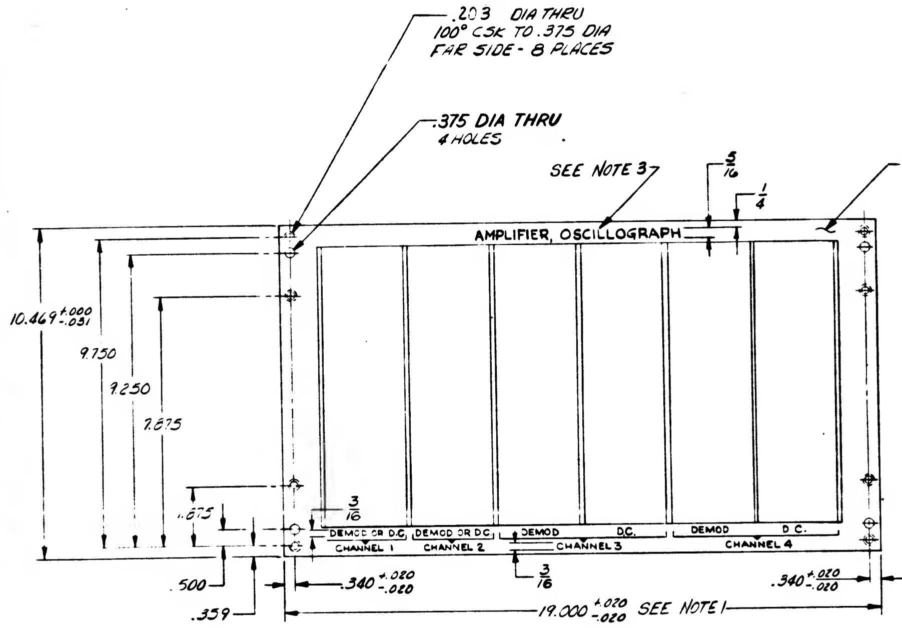
| | | | | |
|---|---|---|---|---|
| 1900070-011 | 1900000 | UNLESS OTHERWISE SPECIFIED<br>DIMENSIONS ARE IN INCHES<br>TOLERANCES ON<br>FRACTIONS DECIMALS ANGLES<br>± — ± — ± —<br>DO NOT SCALE THIS DRAWING | AC SPARK PLUG DIVISION, GMC<br>MILWAUKEE, WISCONSIN<br>ACSP PN<br>DRAWN A.J. Fuller DATE 12 APR 63<br>CHECKED 23 APR 63<br>APPROVAL R. Rahn Apr 23, 1963<br>APPROVAL 23 APR 63 | MANNED<br>SPACECRAFT CENTER<br>HOUSTON, TEXAS<br>RACK, OSCILLOGRAPH |
| NEXT ASSY | USED ON | MATERIAL<br>— | NASA APPROVAL 5/8/63 | CODE IDENT NO. | 
| APPLICATION | | CONTRACT NAS 9-497 | MIT APPROVAL | SIZE E 1900067<br>SCALE 1:2 SHEET 2 OF 2 |

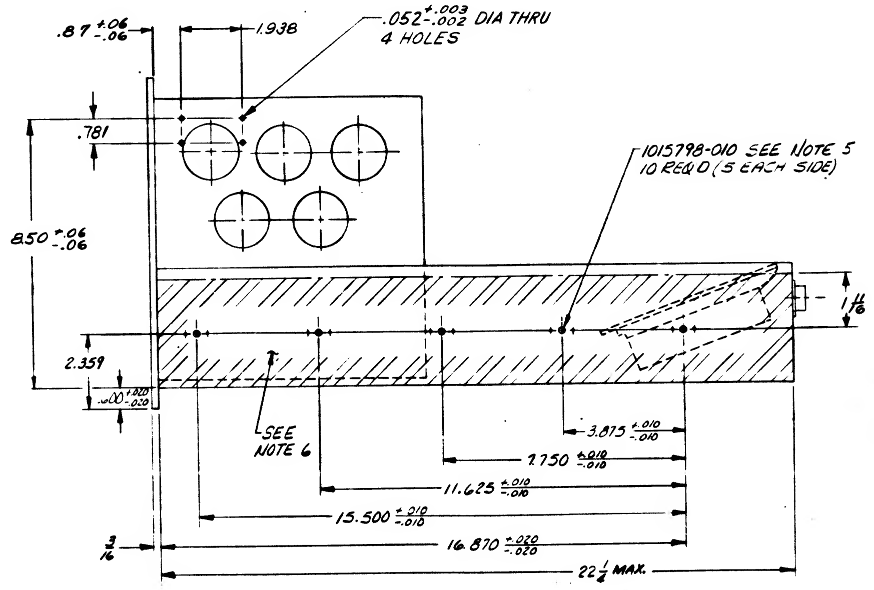
| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| A | | ADDED ITEM [illegible] MATERIAL PER MXC 186912 | | 63 | |
| A1 | | CHANGE IN ACCORDANCE WITH MXC 186917 | | 7 JUN 63 | |
| 3 | | CHANGE IN ACCORDANCE WITH MXC 190289 PER TDRR 04712 | | DEC 63 | |
| C | | CHANGE IN ACCORDANCE WITH MXC-192077 PER TDRR 08219 | | DEC 63 | RH |
| D | | REPLACED WITH CHANGE BY REV. E PER TDRR 29375 | | 65 | |





VIEW AA





**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01709 DATE 8 May 63

| D | D |
|---|---|
| C | C |
| B | B |
| SHEET 1 | SHEET 2 |

REVISION STATUS OF SHEETS

Ⓓ REPLACED WITH CHANGE BY REV Ⓔ

1900067 D

| QUANTITY REQUIRED | | | | EFFECTIVITY | ITEM NO | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | 011 | | | | |
| | | | | | 1 | TBA | [illegible] |

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 900070-011 | 1900000 | |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ± .005 ANGLES ± 2°
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN A. J. Fluder DATE 23 APR 63
CHECKED
APPROVAL R. Rohm Apr 23 1963
APPROVAL A Model 23 Apr 63
NASA APPROVAL 5/8/63
Lester Jedman 5/8/63
MIT APPROVAL 8 May 63

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

RACK OSCILLOGRAPH

CODE IDENT NO
SIZE E
1900067
SCALE 1:2
SHEET 2 OF 2

| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
|---|---|---|---|---|---|
| - |  | [illegible] PER NXC 186912 |  |  | [illegible] |
| A1 |  | CHANGE IN ACCORDANCE WITH MXC 186917 |  | 7 JUN 63 | [illegible] |
| B |  | CHANGE IN ACCORDANCE WITH MCX 190289 PER TDRR 04714 |  | [illegible] | [illegible] |
| C |  | CHANGE IN ACCORDANCE WITH MXC-192077 PER TDRR 08219 |  | 11 DEC 63 | RM<br>JEL |
| D |  | REPLACED WITH CHANGE BY REV. E PER TDRR 20375 |  | [illegible] | [illegible] |

REQUIREMENTS:

1 19 AND 17 INCH DIMENSIONS OF PANEL AND CHASSIS SHALL BE CENTRALIZED WITHIN .020 AT ASSEMBLY. SIDES OF CHASSIS LOCATED BY 17 INCH DIMENSION SHALL BE PARALLEL WITHIN .031 AND PERPENDICULAR TO REAR SURFACE OF FRONT PANEL WITHIN .062.

2

3 FRONT PANEL CHARACTERS: FRONT PANEL CHARACTERS PER ND-1002122, CHARACTER HEIGHT $\frac{1}{8}$ EXCEPT WHERE OTHERWISE SPECIFIED. SILK SCREEN PER ND1002019 USING ENAMEL, SEMI-GLOSS, INSTRUMENT BLACK, COLOR 514 OF ANA 157. CENTRALIZE AS SHOWN. CHARACTER HEIGHT ELSEWHERE ON THE UNIT SHALL BE $\frac{1}{8}{}^{+\frac{1}{16}}_{-0}$. LETTERING SHALL BE APPLIED PER ND 1002019.

4 BORDER AREAS, WITHIN $\frac{9}{16}$ INCH OF THE PANEL EDGE, ON THE REAR SURFACE OF THE FRONT PANEL SHALL BE CO-PLANER AND FREE OF PROTRUSIONS.

5 MOUNT NUT 1015798-010 FROM THE INSIDE OF THE CHASSIS. ALLOW $\frac{3}{8}$ INCH SCREW CLEARANCE AT EACH NUT FROM THE INSIDE SURFACE OF THE CHASSIS.

6 THERE SHALL BE NO PROTRUSIONS OUTSIDE OF THE CHASSIS IN THIS AREA.

7 FRONT PANEL FINISH-CADMIUM PLATE BOTH SURFACES AND ALL EDGES PER QQ-P-416A, TYPE 3, CLASS I. PRIME WITH MIL-C-15328, COATING PER MIL-C-8507. PRIME AND FINISH COATS TO BE APPLIED TO PANEL FRONT AND EDGES ONLY. FINISH PAINT TO BE 2 COATS OF TT-E-529, CLASS B ENAMEL, SEMI-GLOSS, LIGHT GRAY, COLOR 26440 OF FED. STD 595.
NOTE: MIL-P-8585 PRIMER SUPERSEDES MIL-P-6889.

8 THE REAR SURFACE OF THE FRONT PANEL SHALL BE PROTECTED FROM CORROSION BY CADIMUM PLATE PER QQ-P-416.

9 ALL OUTSIDE SURFACES MUST BE FREE FROM BURRS AND SHARP EDGES.

10 FRONT PANEL MATERIAL—STEEL PER QQ-S-636

11 INTERPRET DRAWING IN ACCORDANCE WITH THE STANDARDS PERSCRIBED BY MIL-D-70327

12 ALLOW $\frac{1}{2}$ INCH CLEARANCE BEHIND EACH HOLE.

DATA SOURCE:
MASSA DIVISION
HINGHAM, MASS
MODEL AR-600

**FOR INFORMATION ONLY**
CLASS B RELEASE TDR No. 01209 DATE 8 May 63

Ⓓ REPLACED WITH CHANGE BY REV Ⓔ

| NEXT ASSY | USED ON |
|---|---|
| 1900070-011 | 1900000 |

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN A. J. FLUDER DATE 12 APR 63
CHECKED 23 APR 63
APPROVAL Apr 23, 1963
APPROVAL 23 APR 63
NASA APPROVAL 5/8/63
Lester [illegible] 5/8/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

RACK, OSCILLOGRAPH

CODE IDENT NO
SIZE E
1900067
SCALE 1:2
SHEET 2 OF 2

1900067 D

REQUIREMENTS:

SIGNAL INPUT RANGE: 20 mV TO 20 VOLTS RMS FULL SCALE DEFLECTION, WITH ± 20 mm FROM CENTER ZERO.

SENSITIVITY: 1 mV PER mm.

INPUT IMPEDANCE: SIGNAL CHANNEL 100 K OHMS
REFERENCE CHANNEL 200 K OHMS

REFERENCE INPUT RANGE: 9 VOLTS TO 115 VOLTS
FREQUENCIES: 60 CPS, 800 CPS, 3200 CPS

ISOLATION: SIGNAL INPUTS, OUTPUTS INPUT POWER AND CHASSIS SHALL BE ELECTRICALLY ISOLATED FROM EACH OTHER.

DRIFT: 0.25 mm MAX. PER HOUR

ZERO OFFSET: ± 20 mm FROM CENTER ZERO.

QUADRATURE REJECTION: 100 TO 1.

RANGE SETTINGS: 1, 2, 5, 10, 20, 50, 100, 200, 500, 1000 mV PER mm AND OFF.

FRONT PANEL CONTROLS: 10 STEP ATTENUATOR, FILTER SELECT, ZERO ADJUSTMENT, CAL ADJUSTMENT, CAL 10 MILLIVOLT BUTTON, PHASE ADJUSTMENT, 60 CYCLE PRIME BUTTON AND OVERLOAD LAMP.

THE PHASE SENSITIVE DEMODULATOR PR 500 (MODIFIED) P/N 1900068 SHALL BE ELECTRICALLY AND MECHANICALLY COMPATIBLE FOR USE WITH THE DRIVER AMPLIFIER P/N 1900069 AND THE OSCILLOGRAPH RACK P/N 1900067.

WEIGHT: 5 LBS MAX.

THE SHIELD ON THE PRIMARY OF THE SIGNAL INPUT TRANSFORMER IN THE PHASE SENSITIVE DEMODULATOR SHALL BE BROUGHT OUT TO PIN "G" ON THE POWER CONNECTOR (MS-3112-16-8P) ON THE DRIVER AMPLIFIER DA401A (MODIFIED).

FRONT PANEL FINISH: APPLY FINISH P513 OF SPECIFICATION MIL-F-14072, PRIME AND FINISH COATS TO BE APPLIED TO PANEL FRONT AND EDGES ONLY. APPLY 2 COATS OF TT-E-529A, CLASS B ENAMEL, SEMI-GLOSS, LIGHT GRAY, COLOR 26440 OF FED-STD-595.
NOTE: MIL-P-8585 PRIMER SUPERSEDES MIL-P-6889.

FRONT PANEL CHARACTERS (FUTURA DEMIBOLD) CHARACTER HEIGHT $\frac{1}{8}$ EXCEPT WHERE OTHERWISE SPECIFIED. SILK SCREEN PER ND1002019 USING ENAMEL, SEMI-GLOSS, INSTRUMENT BLACK, COLOR 514 OF ANA-157. CENTRALIZE AS SHOWN.

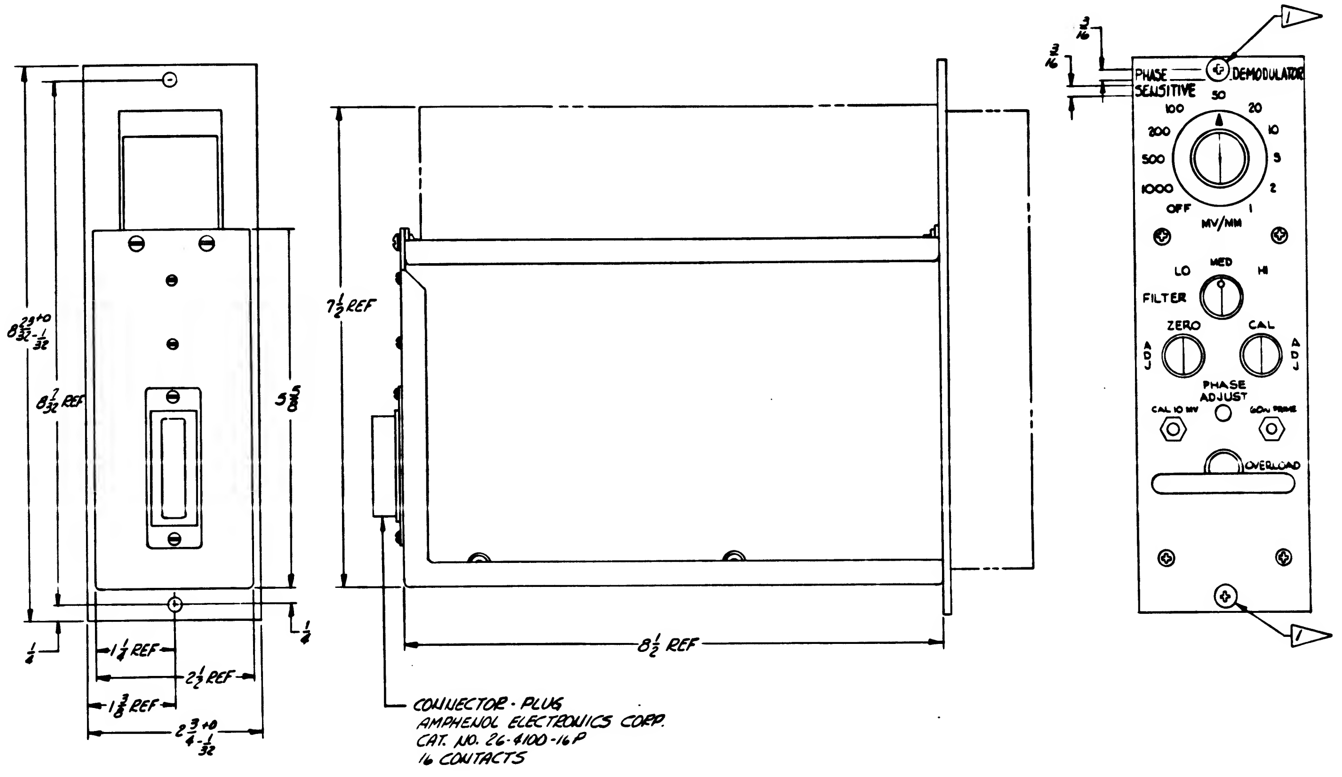
CHARACTER HEIGHT ELSEWHERE ON THE UNIT SHALL BE $\frac{1}{8}{}^{+\frac{1}{16}}_{-0}$. LETTERING SHALL BE LEGIBLY APPLIED BY ANY SUITABLE MEANS.

THE REAR SURFACE OF THE FRONT PANEL SHALL BE PROTECTED FROM CORROSION BY CADIMUM PLATE PER QQ-P-416.

THE UNIT SHALL BE DESIGNED TO MEET THE ENVIRONMENTAL REQUIREMENTS OF ND-

1 ▷ FINGER OPERATED CAPTIVATED FASTENERS SHALL BE INSTALLED AS PART OF EACH P.A. FASTENER HEADS SHALL ALSO BE PROVIDED WITH A CROSS RECESSED SLOT.

DATA SOURCE:
MASSA DIVISION
HINGHAM, MASS
MODEL PR-500



| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| A2 | | (1) NOTE 1 WAS [illegible] CROSS SLOT FOR USE [illegible] SCREW-DRIVER (2) ADDED ITEMS 1 AND 2 TO LIST OF MATERIAL. | | 7 MAY 63 | |

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. C1209 DATE 8 May 63

| | | | 011 | EFFECTIVITY | ITEM NO | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | | | 1 | TEA | FASTENER, CAPTIVATE |
| | | | | | 2 | TEA | PHASE SENSITIVE DE[illegible] (PR-500) |
| QUANTITY REQUIRED | | | | | LIST OF PARTS AND MATERIALS | | |

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900070-011 | 1900004 | 011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS $\pm\frac{1}{64}$ DECIMALS $\pm.005$ ANGLES $\pm2°$
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE WISCONSIN
ACSP PN
DRAWN A. J. Fluoe DATE 10 APR 63
CHECKED 23 APR 63
APPROVAL Apr 23 1963
APPROVAL 23 APR 63
NASA APPROVAL 5/7/63
MIT APPROVAL 5/2/63

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

PHASE SENSITIVE
DEMODULATOR
ASSY

CODE IDENT NO
SIZE E
1900068
SCALE 1:1
SHEET

1900068 A

REQUIREMENTS:

SIGNAL INPUT RANGE: 20 mV TO 20 VOLTS RMS FULL SCALE DEFLECTION, WITH ± 20 mm FROM CENTER ZERO.

SENSITIVITY: 1 mV PER mm.

INPUT IMPEDANCE: SIGNAL CHANNEL 100 K OHMS
REFERENCE CHANNEL 200 K OHMS

REFERENCE INPUT RANGE: 9 VOLTS TO 115 VOLTS
FREQUENCIES: 800±40 CPS, 800±100 CPS, 3200±640 CPS.

ISOLATION: SIGNAL INPUTS, OUTPUTS, INPUT POWER AND CHASSIS SHALL BE ELECTRICALLY ISOLATED FROM EACH OTHER.

DRIFT: 0.25 mm MAX. PER HOUR

ZERO OFFSET: ± 20 mm FROM CENTER ZERO.

QUADRATURE REJECTION: 100 TO 1.

RANGE SETTINGS: 1, 2, 5, 10, 20, 50, 100, 200, 500, 1000 mV PER mm AND OFF.

FRONT PANEL CONTROLS: 10 STEP ATTENUATOR, FILTER SELECT, ZERO ADJUSTMENT, CAL ADJUSTMENT, CAL 10 MILLIVOLT BUTTON, PHASE ADJUSTMENT, 60 CYCLE PRIME BUTTON AND OVERLOAD LAMP.

THE PHASE SENSITIVE DEMODULATOR PR 500 (MODIFIED) P/N 1900068 SHALL BE ELECTRICALLY AND MECHANICALLY COMPATIBLE FOR USE WITH THE DRIVER AMPLIFIER P/N 1900069 AND THE OSCILLOGRAPH RACK P/N 1900067.

WEIGHT: 5 LBS MAX.

THE SHIELD ON THE PRIMARY OF THE SIGNAL INPUT TRANSFORMER IN THE PHASE SENSITIVE DEMODULATOR SHALL BE BROUGHT OUT TO PIN "G" ON THE POWER CONNECTOR (MS-3112-16-8P) ON THE DRIVER AMPLIFIER DA-101A (MODIFIED).

FRONT PANEL FINISH: APPLY FINISH P513 OF SPECIFICATION MIL-F-14072, PRIME AND FINISH COATS TO BE APPLIED TO PANEL FRONT AND EDGES ONLY. APPLY 2 COATS OF TT-E-529A, CLASS B ENAMEL, SEMI-GLOSS, LIGHT GRAY, COLOR 26440 OF FED-STD-595.
NOTE: MIL-P-8585 PRIMER SUPERSEDES MIL-P-6889.

FRONT PANEL CHARACTERS (FUTURA DEMIBOLD) CHARACTER HEIGHT $\frac{1}{8}$ EXCEPT WHERE OTHERWISE SPECIFIED. SILK SCREEN PER ND 1002019 USING ENAMEL, SEMI-GLOSS, INSTRUMENT BLACK, COLOR 514 OF ANA-157. CENTRALIZE AS SHOWN.

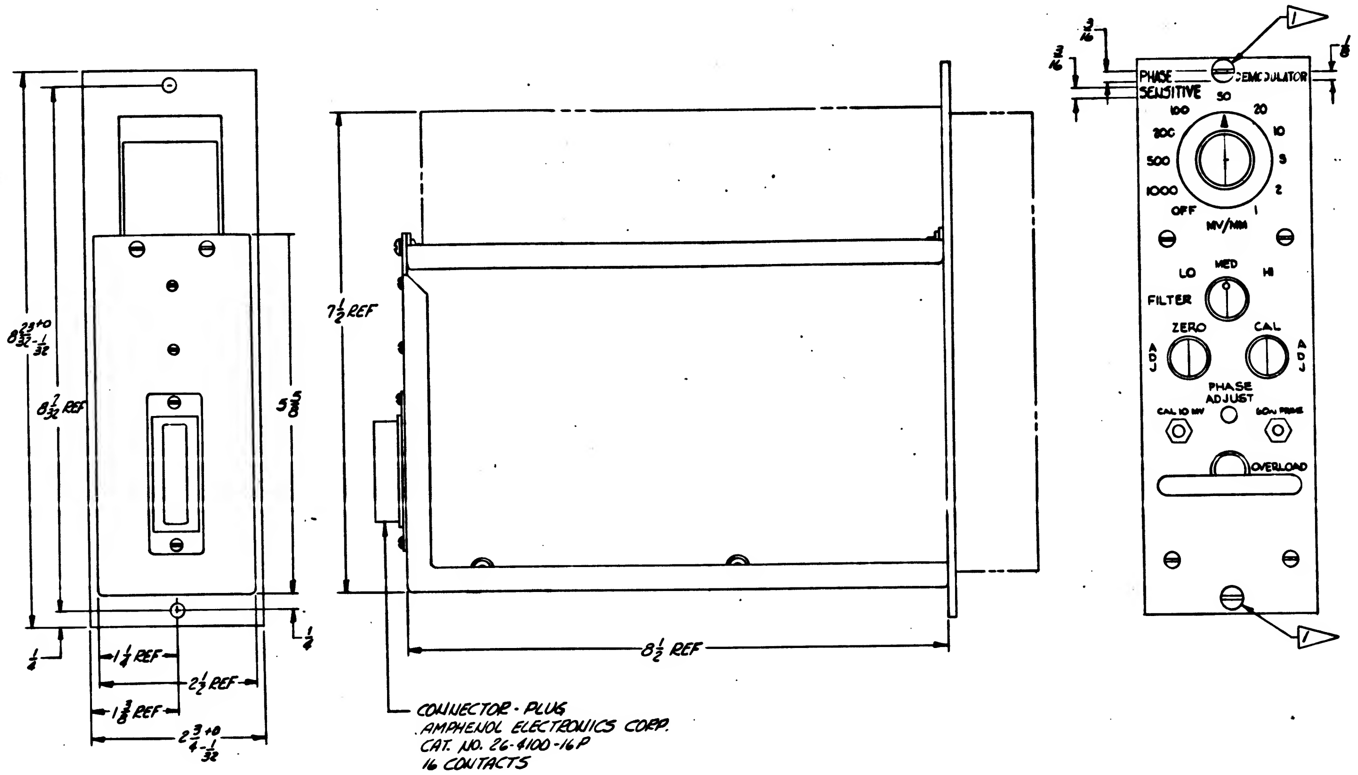
CHARACTER HEIGHT ELSEWHERE ON THE UNIT SHALL BE $\frac{1}{8}{}^{+\frac{1}{16}}_{-0}$. LETTERING SHALL BE LEGIBLY APPLIED BY ANY SUITABLE MEANS.

THE REAR SURFACE OF THE FRONT PANEL SHALL BE PROTECTED FROM CORROSION BY CADMIUM PLATE PER QQ-P-416.

INTERPRET DRAWING IN ACCORDANCE WITH THE STANDARDS PRESCRIBED BY MIL-D-70327.

1▷ FINGER OPERATED CAPTIVATED FASTENERS SHALL BE INSTALLED AS PART OF EACH PHASE SENSITIVE DEMODULATOR FASTENERS SHALL BE PROVIDED WITH A SLOT.

DATA SOURCE:
MASSA DIVISION
HINGHAM, MASS
MODEL PR-500



CONNECTOR - PLUG
AMPHENOL ELECTRONICS CORP.
CAT. NO. 26-4100-16P
16 CONTACTS

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD |
| $A_2$ | | (1) NOTE 1▷ WAS ... WITH A CROSS SLOT FOR USE WITH A PHILLIPS SCREW-DRIVER. (2) ADDED ITEMS 1 AND 2 IN LIST OF MATERIAL. PER MXC 186913 | | 7 MAY 63 | WK |
| B | | CHANGE IN ACCORDANCE WITH MXC 187699 | | 1 JUL 63 | [illegible] |
| C | | CHANGE IN ACCORDANCE WITH MXC 188567 PER TDRR 04046 | | 6 AUG 63 | [illegible] |

Ⓜ

FOR INFORMATION ONLY
CLASS B RELEASE TDR No. C1209 DATE 8 May 63

1900068 C

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | 1 | TBA | FASTENER, CAPTIVATED |
| | | | | | 2 | TBA | PHASE SENSITIVE DEMODULATOR (PR500) |
| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| QUANTITY REQUIRED | | | | | LIST OF PARTS AND MATERIALS | | |

| | | |
|---|---|---|
| 1900071-011 | | |
| 1900070-011 | 1900000 | 011 |
| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
| APPLICATION | | |

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

| FRACTIONS | DECIMALS | ANGLES |
|---|---|---|
| $\pm\frac{1}{64}$ | ±.005 | ±2° |

DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN A. J. Fluger DATE 10 APR 63
CHECKED 23 APR 63
APPROVAL R. Kahn Apr 23, 1963
APPROVAL 23 APR 63
NASA APPROVAL 5/9/63
Lester Pedersen 5/9/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

PHASE SENSITIVE
DEMODULATOR
ASSY

CODE IDENT NO.
SIZE E
1900068
SCALE 1:1
SHEET

INCHES
PHOTOGRAPHIC SCALE ONLY

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| A | | ADDED ITEM NO. 1 LIST OF MATERIAL | | | |

REQUIREMENTS:

GAIN (TRANSCONDUCTANCE) SHALL BE ± 1 VOLT INPUT FOR ± 560 MILLIAMPS OUTPUT.

DRIFT: LESS THAN .2 MM FOR A ± 10% LINE VOLTAGE CHANGE COMBINED WITH AN AMBIENT TEMPERATURE CHANGES OF 20 TO 50 DEGREES C.

IN/OUT SWITCH SHALL BE MOUNTED ON REAR OF DRIVER AMPLIFIER FOR OPTIONAL PEN MOTOR FREQUENCY COMPENSATION.

THE DRIVER AMPLIFIER DA-101A (MODIFIED) P/N 1900069 SHALL BE ELECTRICALLY AND MECHANICALLY COMPATIBLE FOR USE WITH THE DC PREAMPLIFIER PR-200 (MODIFIED) P/N 1900074, PHASE SENSITIVE DEMODULATOR PR-500 (MODIFIED) P/N 1900068, OSCILLOGRAPH P/N 1900073.

ISOLATION: SIGNAL INPUT, POWER INPUTS AND CHASSIS SHALL BE ELECTRICALLY ISOLATED FROM EACH OTHER.

CIRCUIT: MODIFICATION FROM DA101A-
REMOVE THE WIRE FROM PIN 14 OF J101 AND CONNECT TO PIN 6 OF J101. ADD A WIRE FROM PIN H OF THE SIGNAL INPUT CONNECTOR TO PIN 14 ON J101.

THE UNIT SHALL BE DESIGNED TO MEET THE ENVIRONMENTAL REQUIREMENTS OF ND-

1 ▷ MS-3112-16-8PW (J1) - WIRE DESTINATION-

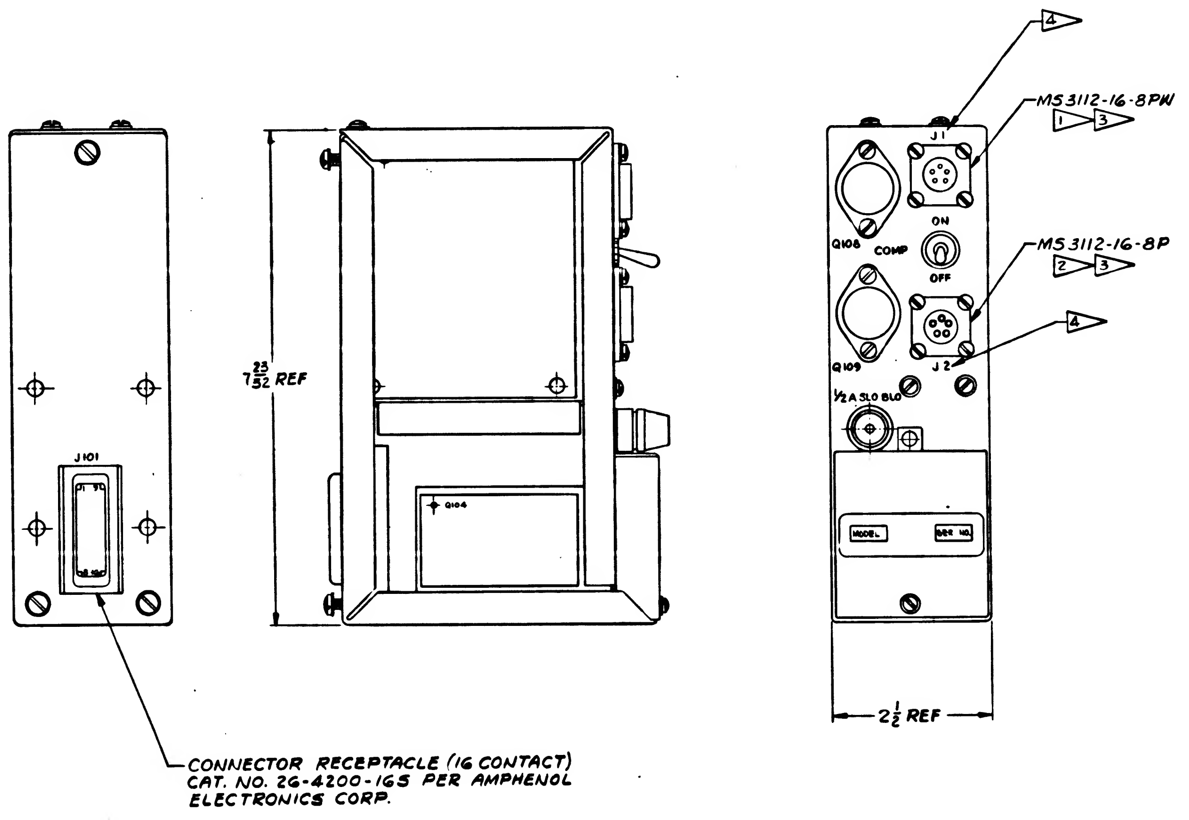
| PIN LETTER | INTERNAL CONNECTION |
|---|---|
| A | OPEN |
| B | INPUT + |
| C | INPUT - |
| D | PIN 3 OF J101 (DEMODULATOR REFERENCE) |
| E | PIN 4 OF J101 (DEMODULATOR REFERENCE) |
| F | GROUND |
| G | OPEN |
| H | PIN 14 OF J101 |

2 ▷ MS-3112-16-8P (J2) - WIRE DESTINATION

| PIN LETTER | INTERNAL CONNECTION |
|---|---|
| A | CHASSIS GROUND |
| B | + SIGNAL OUT |
| C | - SIGNAL OUT |
| D | FEEDBACK |
| E | 115 V, 60 CPS |
| F | 115 V, 60 CPS |
| G | DEMODULATOR TRANSFER SHIELD |
| H | OPEN |

3 ▷ EXACT CONNECTOR LOCATION ON REAR OF CHASSIS TO BE DETERMINED BY SUPPLIER.

4 ▷ CHARACTER HEIGHT $\frac{1}{8}{}^{+1/16}_{-0}$. LETTERING SHALL BE LEGIBLY APPLIED BY ANY SUITABLE MEANS.



**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. C1209 DATE 8 May 63

DATA SOURCE:

MASSA DIVISION
HINGHAM, MASS.

AS:

AMPLIFIER DRIVER
MODEL DA-101A

| ITEM NO | NO. REQD | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|
| 1 | | TBA | AMPLIFIER DRIVER MODEL DA-101A |

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900070-011 | 1900004 | |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

| FRACTIONS | DECIMALS | ANGLES |
|---|---|---|
| + 1/64 | +.005 | +2° |
| - 1/64 | -.005 | -2° |

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN 11 APR 63
CHECKED 23 APR 63
APPROVAL Apr 23 1963
APPROVAL 23 APR 63
NASA APPROVAL
May 7 1963
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

AMPLIFIER DRIVER

CODE IDENT NO
SIZE E
1900069
SCALE 1:1
SHEET

1900069

| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
|---|---|---|---|---|---|
| A | | ADDED ITEM NO. 1 IN LIST OF MATERIAL. PER MXC 186914 | | MAY [illegible] | [illegible] |
| B | | CHANGED IN ACCORDANCE WITH MXC187700 PER TDRR 00094 | | 1 JUL 63 | [illegible] |

REQUIREMENTS:

GAIN (TRANSCONDUCTANCE) SHALL BE ±1 VOLT INPUT FOR ±560 MILLIAMPS OUTPUT.

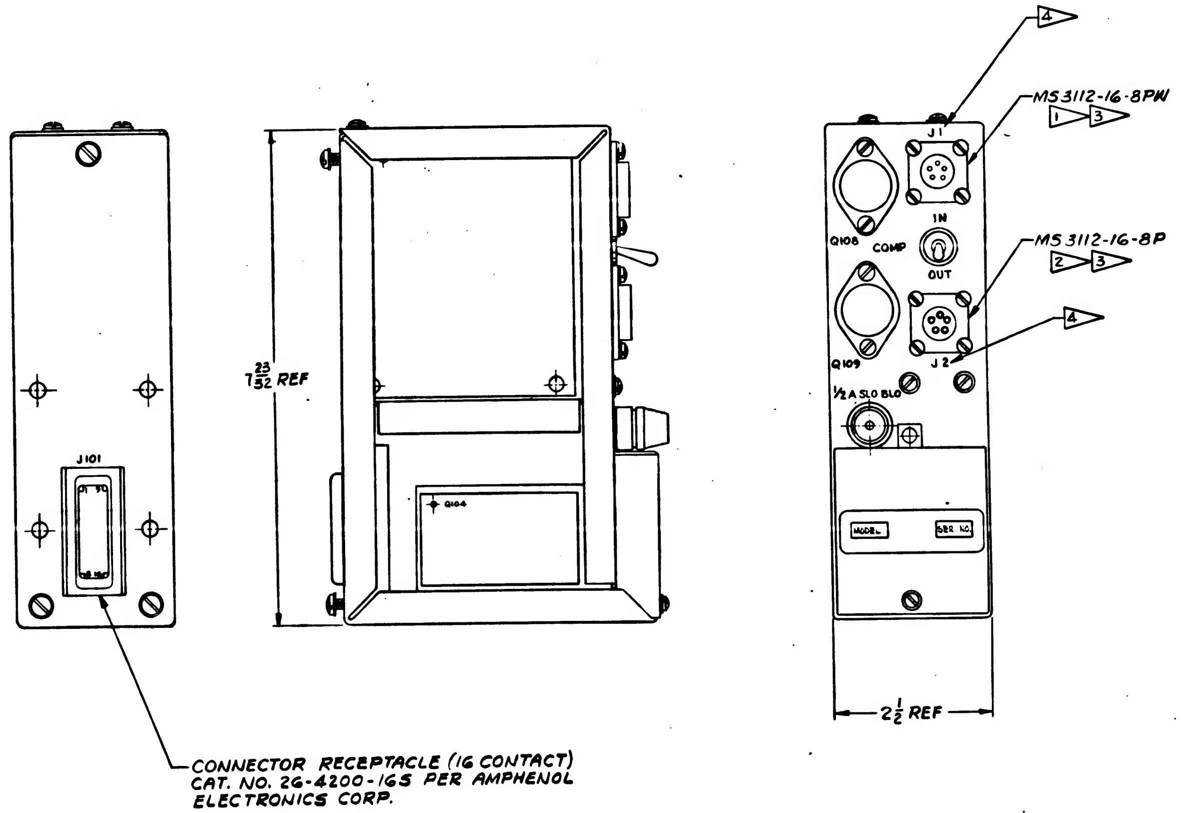
DRIFT: LESS THAN .2 MM FOR A ±10% LINE VOLTAGE CHANGE COMBINED WITH AN AMBIENT TEMPERATURE CHANGES OF 20 TO 50 DEGREES C.

IN/OUT SWITCH SHALL BE MOUNTED ON REAR OF DRIVER AMPLIFIER FOR OPTIONAL PEN MOTOR FREQUENCY COMPENSATION.

THE DRIVER AMPLIFIER DA-101A (MODIFIED) P/N 1900069 SHALL BE ELECTRICALLY AND MECHANICALLY COMPATIBLE FOR USE WITH THE DC PREAMPLIFIER PR-200 (MODIFIED) P/N 1900074, PHASE SENSITIVE DEMODULATOR PR-500 (MODIFIED) P/N 1900068, OSCILLOGRAPH P/N 1900073.

ISOLATION: SIGNAL INPUT, POWER INPUTS AND CHASSIS SHALL BE ELECTRICALLY ISOLATED FROM EACH OTHER.

CIRCUIT: MODIFICATION FROM DA104A –
REMOVE THE WIRE FROM PIN 14 OF J101 AND CONNECT TO PIN 6 OF J101. ADD A WIRE FROM PIN H OF THE SIGNAL INPUT CONNECTOR TO PIN 14 ON J101.



**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01209 DATE 8 May 63

1 MS-3112-16-8PW (J1) - WIRE DESTINATION -

| PIN LETTER | INTERNAL CONNECTION |
|---|---|
| A | OPEN |
| B | INPUT + |
| C | INPUT – |
| D | PIN 3 OF J101 (DEMODULATOR REFERENCE) |
| E | PIN 4 OF J101 (DEMODULATOR REFERENCE) |
| F | GROUND |
| G | OPEN |
| H | PIN 14 OF J101 |

2 MS-3112-16-8P (J2) - WIRE DESTINATION

| PIN LETTER | INTERNAL CONNECTION |
|---|---|
| A | CHASSIS GROUND |
| B | + SIGNAL OUT |
| C | – SIGNAL OUT |
| D | FEEDBACK |
| E | 115 V, 60 CPS |
| F | 115 V, 60 CPS |
| G | DEMODULATOR TRANSFER SHIELD |
| H | OPEN |

3 EXACT CONNECTOR LOCATION ON REAR OF CHASSIS TO BE DETERMINED BY SUPPLIER.

4 CHARACTER HEIGHT $1/8 \, {}^{+1/16}_{-0}$. LETTERING SHALL BE LEGIBLY APPLIED BY ANY SUITABLE MEANS.

DATA SOURCE:
MASSA DIVISION
HINGHAM, MASS.
AS:
AMPLIFIER DRIVER
MODEL DA-104A

| ITEM NO. | NO. REQD | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|
| | | TBA | AMPLIFIER, DRIVER [illegible] |

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900071-011 | | |
| 1900070-011 | 1900000 | |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

| FRACTIONS | DECIMALS | ANGLES |
|---|---|---|
| + 1/64 | +.005 | +2° |
| – 1/64 | –.005 | –2° |

DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN [illegible] DATE 11 APR 63
CHECKED [illegible] 23 APR 63
APPROVAL [illegible] Apr 23 1963
APPROVAL [illegible] 23 APR 63
NASA APPROVAL [illegible]
L. Gehman May 8 1963
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AMPLIFIER, DRIVER

CODE IDENT NO
SIZE E
1900069
SCALE 1:1
SHEET

1900069 B

INCHES 0 1 2
PHOTOGRAPHIC SCALE ONLY

| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
|---|---|---|---|---|---|
| A | | ADDED ITEM NO. 1 IN LIST OF MATERIAL. PER MXC 186914 | | MAY 63 | WK |
| B | | CHANGED IN ACCORDANCE WITH MXC187700 PER TDRR 00094 | | 1 JUL 63<br>21 OCT 63 | G.E.H. 2/1/78<br>WK |
| C | | CHANGE IN ACCORDANCE WITH CM-194394 CE95 | | 24-JAN-64 | H.F.N. MGM |

REQUIREMENTS:

GAIN (TRANSCONDUCTANCE) SHALL BE ±1 VOLT INPUT FOR ±660 MILLIAMPS OUTPUT.

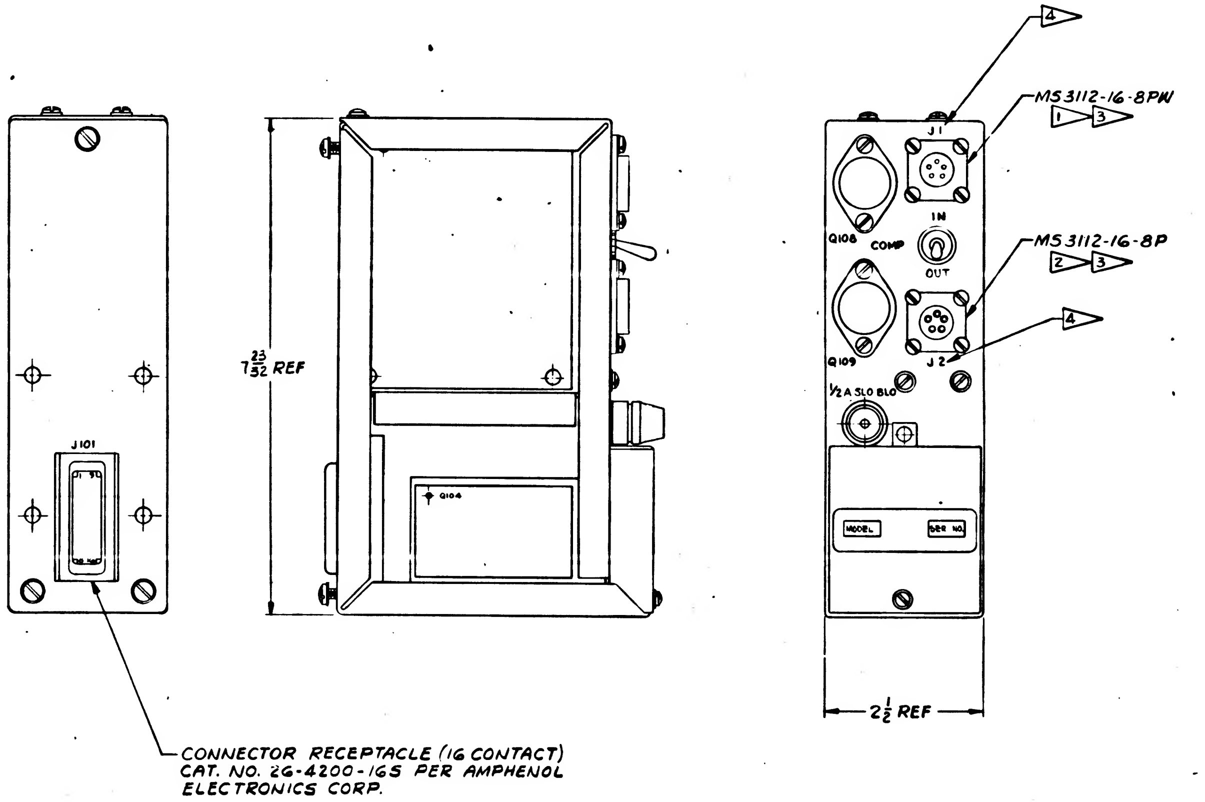
DRIFT: LESS THAN .2 MM FOR A ±10% LINE VOLTAGE CHANGE COMBINED WITH AN AMBIENT TEMPERATURE CHANGES OF 20 TO 50 DEGREES C.

IN/OUT SWITCH SHALL BE MOUNTED ON REAR OF DRIVER AMPLIFIER FOR OPTIONAL PEN MOTOR FREQUENCY COMPENSATION.

THE DRIVER AMPLIFIER DA-101A (MODIFIED) P/N 1900069-011 SHALL BE ELECTRICALLY AND MECHANICALLY COMPATIBLE FOR USE WITH THE DC PREAMPLIFIER PR-200 (MODIFIED) P/N 1900074, PHASE SENSITIVE DEMODULATOR PR-500 (MODIFIED) P/N 1900068, OSCILLOGRAPH P/N 1900073.

ISOLATION: SIGNAL INPUT, POWER INPUTS AND CHASSIS SHALL BE ELECTRICALLY ISOLATED FROM EACH OTHER.

CIRCUIT: MODIFICATION FROM DA104A -
REMOVE THE WIRE FROM PIN 14 OF J101 AND CONNECT TO PIN 6 OF J101. ADD A WIRE FROM PIN H OF THE SIGNAL INPUT CONNECTOR TO PIN 14 ON J101.



1 MS-3112-16-8PW (J1) - WIRE DESTINATION -

| PIN LETTER | INTERNAL CONNECTION |
|---|---|
| A | OPEN |
| B | INPUT + |
| C | INPUT - |
| D | PIN 3 OF J101 (DEMODULATOR REFERENCE) |
| E | PIN 4 OF J101 (DEMODULATOR REFERENCE) |
| F | GROUND |
| G | OPEN |
| H | PIN 14 OF J101 |

2 MS-3112-16-8P (J2) - WIRE DESTINATION

| PIN LETTER | INTERNAL CONNECTION |
|---|---|
| A | CHASSIS GROUND |
| B | + SIGNAL OUT |
| C | - SIGNAL OUT |
| D | FEEDBACK |
| E | 115 V, 60 CPS |
| F | 115 V, 60 CPS |
| G | DEMODULATOR TRANSFER SHIELD |
| H | OPEN |

3 EXACT CONNECTOR LOCATION ON REAR OF CHASSIS TO BE DETERMINED BY SUPPLIER.

4 CHARACTER HEIGHT 1/8 +1/16 -0. LETTERING SHALL BE LEGIBLY APPLIED PER ND-1002019.

**FOR INFORMATION ONLY**
CLASS B RELEASE TDR No. 01209 DATE 8/14/63

DATA SOURCE:
MASSA DIVISION
HINGHAM, MASS.
AS:
AMPLIFIER DRIVER
MODEL DA-104A

| ITEM NO | NO. REQD | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|
| 1 | | TBA | AMPLIFIER, DRIVER (MODEL NO. DA-104A) |

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900071-011 | | |
| 1900070-011 | 1900000 | -011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

| FRACTIONS | DECIMALS | ANGLES |
|---|---|---|
| +1/64 | +.005 | +2° |
| -1/64 | -.005 | -2° |

DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE WISCONSIN
ACSP PN
DRAWN DATE 11 APR 63
CHECKED 23 APR 63
APPROVAL Apr 23, 1963
APPROVAL 23 APR 63
NASA APPROVAL May 8, 1963
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AMPLIFIER, DRIVER

CODE IDENT NO.
SIZE E
1900069
SCALE 1:1
SHEET

1900069 C

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| A | | ADDED ITEM NO. 1 IN LIST OF MATERIAL. PER MXC 186914 | | MAY 23 | |
| B | | CHANGED IN ACCORDANCE WITH MXC 187700 PER TDRR 00094 | | 1 JUL 63 | |
| C | | CHANGE IN ACCORDANCE WITH CM-94394 PER PERTCRR [illegible] | | 24 JAN 64 | |
| D | | CHANGE IN ACCORDANCE WITH CM-197468 PER TDRR 10221 | | 12 MAY 64 | 3K |

REQUIREMENTS:

1 GAIN (TRANSCONDUCTANCE) SHALL BE ±1 VOLT INPUT FOR ±660 MILLIAMPS OUTPUT.

2 DRIFT: LESS THAN .2 MM FOR A ±10% LINE VOLTAGE CHANGE COMBINED WITH AN AMBIENT TEMPERATURE CHANGES OF 20 TO 50 DEGREES C.

3 IN/OUT SWITCH SHALL BE MOUNTED ON REAR OF DRIVER AMPLIFIER FOR OPTIONAL PEN MOTOR FREQUENCY COMPENSATION.

4 THE DRIVER AMPLIFIER DA-101A (MODIFIED) P/N 1900069-011 SHALL BE ELECTRICALLY AND MECHANICALLY COMPATIBLE FOR USE WITH THE DC PREAMPLIFIER PR-200 (MODIFIED) P/N 1900074-011, PHASE SENSITIVE DEMODULATOR PR-500 (MODIFIED) P/N 1900068-011, OSCILLOGRAPH P/N 1900073-011.

5 ISOLATION: SIGNAL INPUT, POWER INPUTS AND CHASSIS SHALL BE ELECTRICALLY ISOLATED FROM EACH OTHER.

6 CIRCUIT: MODIFICATION FROM DA104A –
REMOVE THE WIRE FROM PIN 14 OF J101 AND CONNECT TO PIN G OF J101. ADD A WIRE FROM PIN H OF THE SIGNAL INPUT CONNECTOR TO PIN 14 ON J101.

7 MS-3112-16-8PW (J1) - WIRE DESTINATION -

| PIN LETTER | INTERNAL CONNECTION |
|---|---|
| A | OPEN |
| B | INPUT + |
| C | INPUT – |
| D | PIN 3 OF J101 (DEMODULATOR REFERENCE) |
| E | PIN 4 OF J101 (DEMODULATOR REFERENCE) |
| F | GROUND |
| G | OPEN |
| H | PIN 14 OF J101 |

8 MS-3112-16-8P (J2) - WIRE DESTINATION

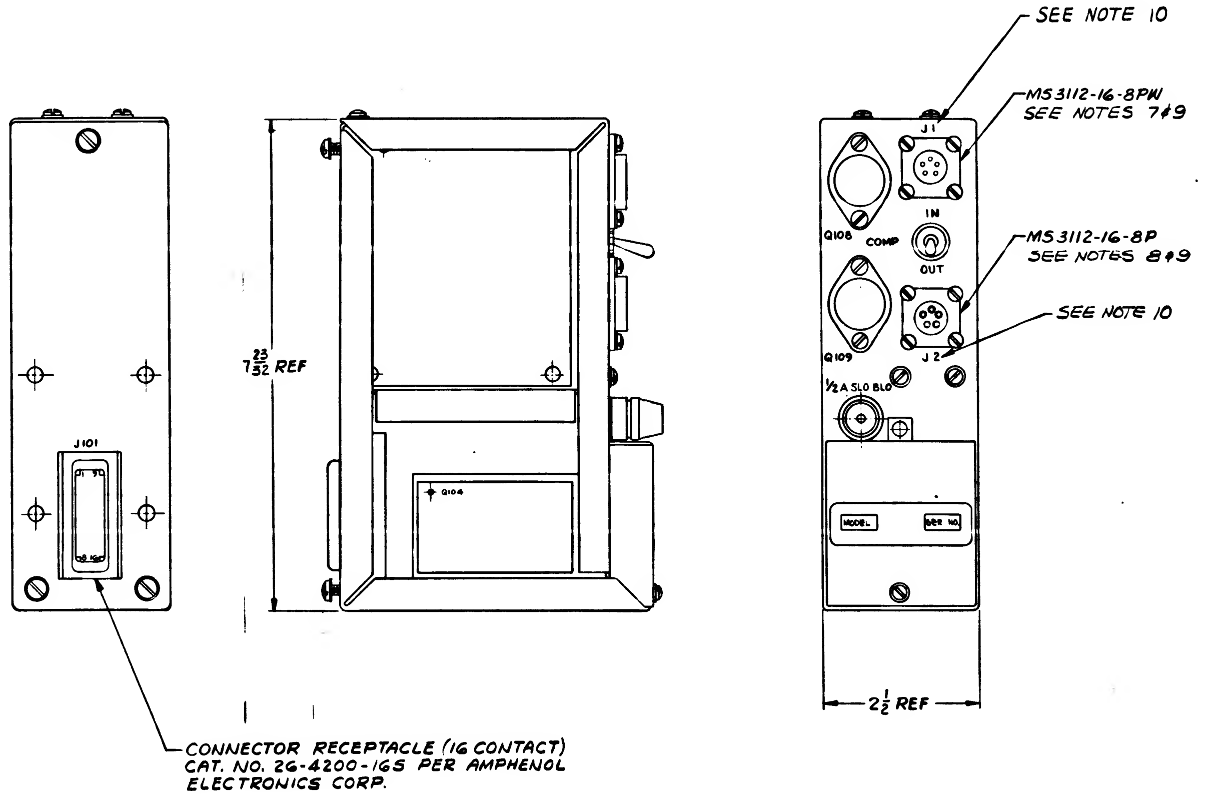
| PIN LETTER | INTERNAL CONNECTION |
|---|---|
| A | CHASSIS GROUND |
| B | + SIGNAL OUT |
| C | – SIGNAL OUT |
| D | FEEDBACK |
| E | 115 V, 60 CPS |
| F | 115 V, 60 CPS |
| G | DEMODULATOR TRANSFER SHIELD |
| H | OPEN |

9 EXACT CONNECTOR LOCATION ON REAR OF CHASSIS TO BE DETERMINED BY SUPPLIER.

10 CHARACTER HEIGHT $\frac{1}{8}{}^{+1/16}_{-0}$. LETTERING SHALL BE LEGIBLY APPLIED PER ND-1002019.

11 WHEN THE AMPLIFIER IS SOLD INDEPENDENTLY FROM ITS HIGHER ASSEMBLY, IT SHALL PASS ALL OF THE TESTS CALLED OUT IN THE PROCUREMENT SPECIFICATION. THE COMPLETE SPECIFICATION APPLIES ONLY WHEN THE AMPLIFIER IS SOLD INDEPENDENTLY FROM A HIGHER ASSEMBLY AND IS SOLD TO A GOVERNMENT AGENCY

DATA SOURCE:
MASSA DIVISION
HINGHAM, MASS.
AS:
AMPLIFIER DRIVER
MODEL DA-104A



J101
$7\frac{23}{32}$ REF
Q104
CONNECTOR RECEPTACLE (16 CONTACT) CAT. NO. 26-4200-16S PER AMPHENOL ELECTRONICS CORP.
SEE NOTE 10
MS3112-16-8PW SEE NOTES 7 & 9
J1
IN
Q108
COMP
OUT
MS3112-16-8P SEE NOTES 8 & 9
SEE NOTE 10
Q109
J2
1/2 A SLO BLO
MODEL
SER NO
$2\frac{1}{2}$ REF

FOR INFORMATION ONLY
CLASS B RELEASE TDR No. 01209 DATE 8/1/63

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | X | | 2 | | PS 1900069 | PROCUREMENT SPEC |
| | | | 1 | | 1 | | TBA | AMPLIFIER, DRIVER (MODEL NO. DA104A) |
| | | | 011 | EFFECTIVITY | ITEM NO. | NO. REQD | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| QUANTITY REQUIRED | | | | | LIST OF PARTS AND MATERIALS | | | |

Ⓓ

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900071-011 | | |
| 1900070-011 | 1900000 | -011 |
| APPLICATION | | |

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ±1/64 DECIMALS ±.005 ANGLES ±2°
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 11 APR 63
CHECKED 23 APR 63
APPROVAL Apr 23, 1963
APPROVAL 23 APR 63
NASA APPROVAL May 8, 1963
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AMPLIFIER, DRIVER

CODE IDENT NO
SIZE E
1900069
SCALE 1:1
SHEET

1900069 D

| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
|---|---|---|---|---|---|
| A | | ADDED ITEM NO. 1 & LIST OF MATERIAL PER MXC 186914 | | MAY 23 | [illegible] |
| B | | CHANGED IN ACCORDANCE WITH MXC187700 PER TDRR [illegible] | | 1 JUL 63 | [illegible] |
| C | | CHANGE IN ACCORDANCE WITH CM-194394 [illegible] | | 24 JAN 64 | [illegible] |
| D | | CHANGE IN ACCORDANCE WITH CM-197468 [illegible] | | 2 MAY 64 | BK |
| E | | CHANGE IN ACCORDANCE WITH CM 304034 TDRR 14918 | | 27 OCT 64 | PHG |

REQUIREMENTS:

1 GAIN (TRANSCONDUCTANCE) SHALL BE ±1 VOLT INPUT FOR ±660 MILLIAMPS OUTPUT.

2 DRIFT: LESS THAN .2 MM FOR A ±10% LINE VOLTAGE CHANGE COMBINED WITH AN AMBIENT TEMPERATURE CHANGES OF 20 TO 50 DEGREES C.

3 IN/OUT SWITCH SHALL BE MOUNTED ON REAR OF DRIVER AMPLIFIER FOR OPTIONAL PEN MOTOR FREQUENCY COMPENSATION.

4 THE DRIVER AMPLIFIER DA-101A (MODIFIED) P/N 1900069-011 SHALL BE ELECTRICALLY AND MECHANICALLY COMPATIBLE FOR USE WITH THE DC PREAMPLIFIER PR-200 (MODIFIED) P/N 1900074-011, PHASE SENSITIVE DEMODULATOR PR-500 (MODIFIED) P/N 1901755-011 OSCILLOGRAPH P/N 1900073 011.

5 ISOLATION: SIGNAL INPUT, POWER INPUTS AND CHASSIS SHALL BE ELECTRICALLY ISOLATED FROM EACH OTHER.

6 CIRCUIT: MODIFICATION FROM DA104A –
REMOVE THE WIRE FROM PIN 14 OF J101 AND CONNECT TO PIN 6 OF J101. ADD A WIRE FROM PIN H OF THE SIGNAL INPUT CONNECTOR TO PIN 14 ON J101.

7 MS-3112E-16-8PW (J1) - WIRE DESTINATION -

| PIN LETTER | INTERNAL CONNECTION |
|---|---|
| A | OPEN |
| B | INPUT + |
| C | INPUT – |
| D | PIN 3 OF J101 (DEMODULATOR REFERENCE) |
| E | PIN 4 OF J101 (DEMODULATOR REFERENCE) |
| F | GROUND |
| G | OPEN |
| H | PIN 14 OF J101 |

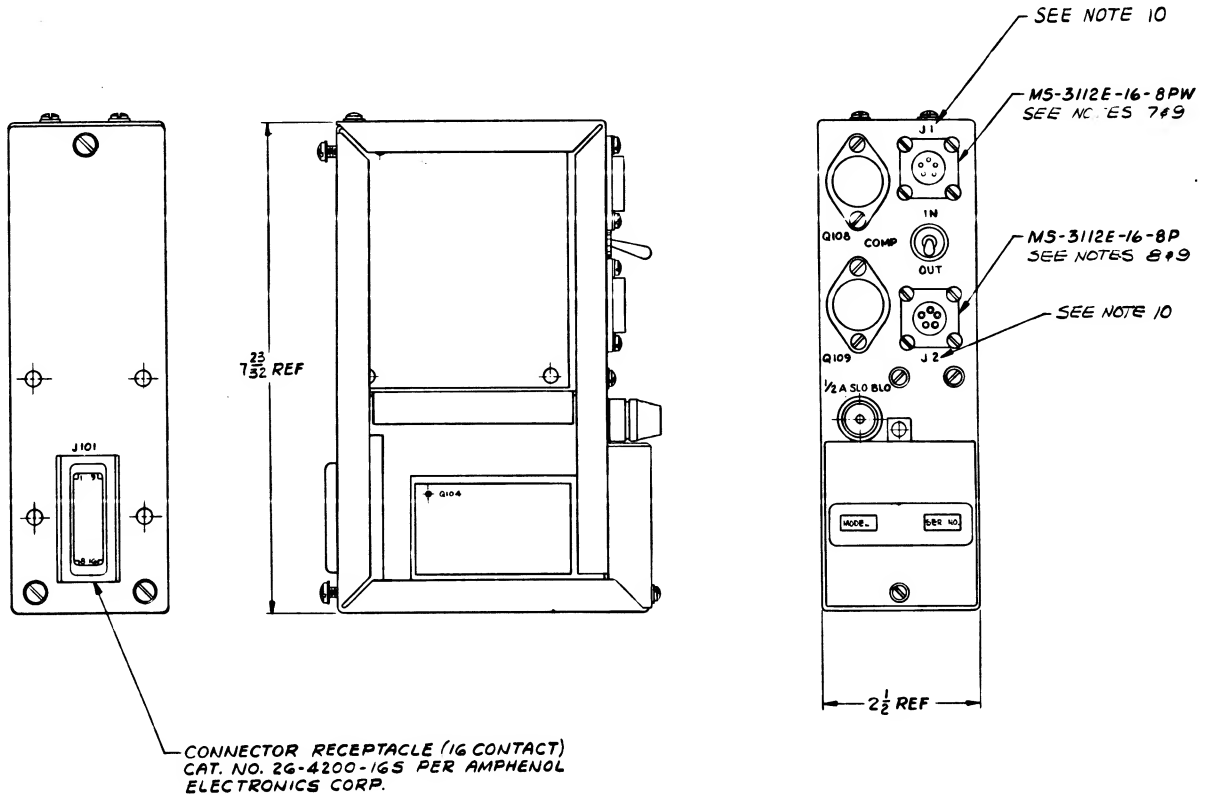
8 MS-3112E-16-8P (J2) - WIRE DESTINATION

| PIN LETTER | INTERNAL CONNECTION |
|---|---|
| A | CHASSIS GROUND |
| B | + SIGNAL OUT |
| C | - SIGNAL OUT |
| D | FEEDBACK |
| E | 115 V, 60 CPS |
| F | 115 V, 60 CPS |
| G | DEMODULATOR TRANSFER SHIELD |
| H | OPEN |

9 EXACT CONNECTOR LOCATION ON REAR OF CHASSIS TO BE DETERMINED BY SUPPLIER.

10 CHARACTER HEIGHT $\frac{1}{8}{}^{+1/16}_{-0}$. LETTERING SHALL BE LEGIBLY APPLIED PER ND-1002019.

11 WHEN THE AMPLIFIER IS SOLD INDEPENDENTLY FROM ITS HIGHER ASSEMBLY, IT SHALL PASS ALL OF THE TESTS CALLED OUT IN THE PROCUREMENT SPECIFICATION. THE COMPLETE SPECIFICATION APPLIES ONLY WHEN THE AMPLIFIER IS SOLD INDEPENDENTLY FROM A HIGHER ASSEMBLY AND IS SOLD TO A GOVERNMENT AGENCY



**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. C1209 DATE 8 May 63

DATA SOURCE:
MASSA DIVISION
HINGHAM, MASS.
AS:
AMPLIFIER DRIVER
MODEL DA-104A

SEE NOTE 11

| | | | 011 | EFFEC-TIVITY | ITEM NO. | NO. REQD | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|---|
| | | | X | | 2 | | PS 1900069 | PROCUREMENT SPEC |
| | | | 1 | | 1 | | TEA | AMPLIFIER, DRIVER MODEL [illegible] |
| QUANTITY REQUIRED | | | | | LIST OF PARTS AND MATERIALS | | | |

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900071-011 | | |
| 1900070-011 | 1900000 | -011 |
| APPLICATION | | |

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

| FRACTIONS | DECIMALS | ANGLES |
|---|---|---|
| + 1/64 | +.005 | +2° |
| - 1/64 | -.005 | -2° |

DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE WISCONSIN
ACSP PN
DRAWN [illegible] DATE 11 APR 63
CHECKED [illegible] 25 APR 63
APPROVAL [illegible] Apr 23 1963
APPROVAL [illegible] 23 APR 63
NASA APPROVAL [illegible] 5/8/63
[illegible] May 8 1963
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

AMPLIFIER, DR [illegible]

CODE IDENT NO
SIZE E
1900069
SCALE 1:1

1900069 E

| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
|---|---|---|---|---|---|
| A | | [illegible] MATERIAL. PER MXC 186914 | | [illegible] | |
| B | | CHANGED IN ACCORDANCE WITH MXC 187700 PER TDRR [illegible] | | 1 JUL 63 | |
| C | | CHANGE IN ACCORDANCE WITH CM-34394 [illegible] | | 24 [illegible] 63 | |
| D | | CHANGE IN ACCORDANCE WITH CM-197468 [illegible] | | 2 MAY 64 | BK |
| E | | CHANGE IN ACCORDANCE WITH CM 304034 TDRR 14918 | | 2 OCT 64 | PHG |
| F | | REPLACED WITH CHANGE BY REV. G PER TDRR 20381 | | 3 [illegible] 65 | |

REQUIREMENTS:

1 GAIN (TRANSCONDUCTANCE) SHALL BE ±1 VOLT INPUT FOR ±660 MILLIAMPS OUTPUT.

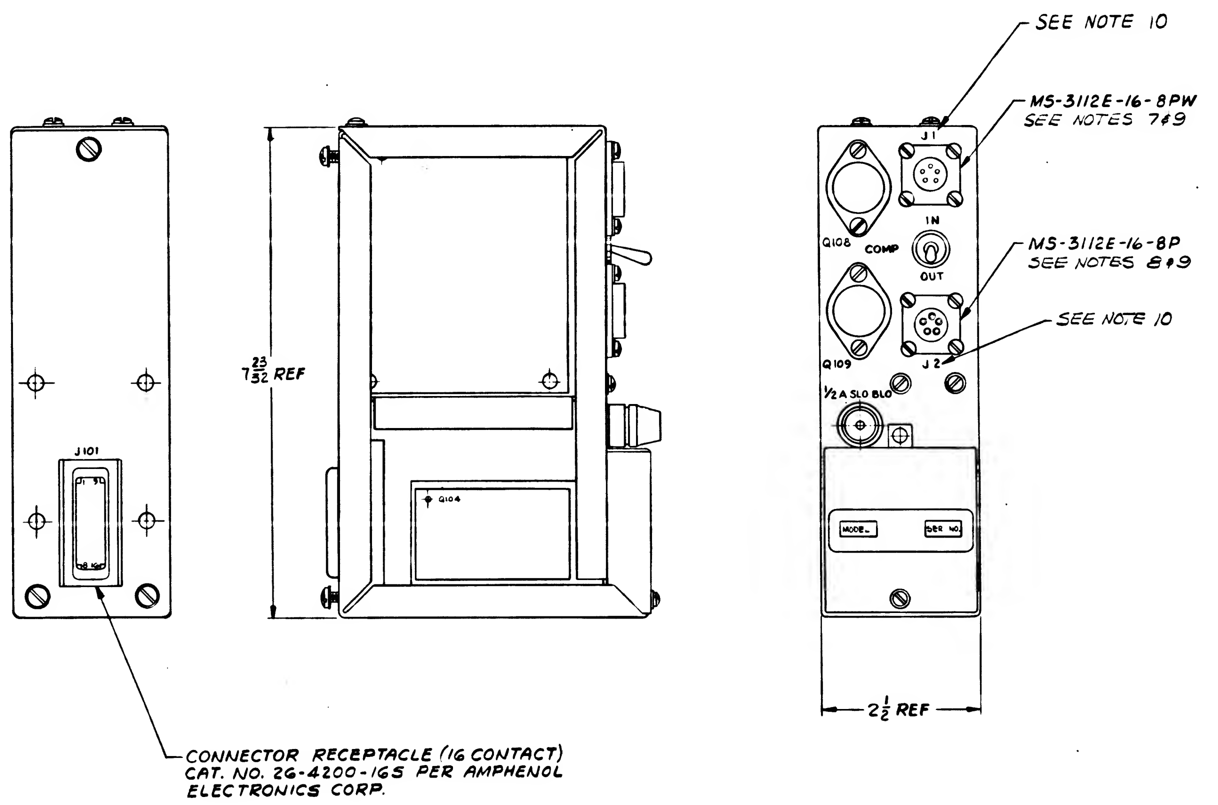
2 DRIFT: LESS THAN .2 MM FOR A ±10% LINE VOLTAGE CHANGE COMBINED WITH AN AMBIENT TEMPERATURE CHANGES OF 20 TO 50 DEGREES C.

3 IN/OUT SWITCH SHALL BE MOUNTED ON REAR OF DRIVER AMPLIFIER FOR OPTIONAL PEN MOTOR FREQUENCY COMPENSATION.

4 THE DRIVER AMPLIFIER DA-101A (MODIFIED) P/N 1900069-011 SHALL BE ELECTRICALLY AND MECHANICALLY COMPATIBLE FOR USE WITH THE DC PREAMPLIFIER PR-200 (MODIFIED) P/N 1900074-011, PHASE SENSITIVE DEMODULATOR PR-500 (MODIFIED) P/N 1901755-011 OSCILLOGRAPH P/N 1900073 011.

5 ISOLATION: SIGNAL INPUT, POWER INPUTS AND CHASSIS SHALL BE ELECTRICALLY ISOLATED FROM EACH OTHER.

6 CIRCUIT: MODIFICATION FROM DA104A –
REMOVE THE WIRE FROM PIN 14 OF J101 AND CONNECT TO PIN 6 OF J101. ADD A WIRE FROM PIN H OF THE SIGNAL INPUT CONNECTOR TO PIN 14 ON J101.


SEE NOTE 10
MS-3112E-16-8PW SEE NOTES 7 & 9
J1
Q108
COMP
IN
OUT
MS-3112E-16-8P SEE NOTES 8 & 9
SEE NOTE 10
Q109
J2
1/2 A SLO BLO
MODEL
SER NO
2 1/2 REF
7 23/32 REF
J101
Q104
CONNECTOR RECEPTACLE (16 CONTACT) CAT. NO. 26-4200-16S PER AMPHENOL ELECTRONICS CORP.

7 MS-3112E-16-8PW (J1) - WIRE DESTINATION -

| PIN LETTER | INTERNAL CONNECTION |
|---|---|
| A | OPEN |
| B | INPUT + |
| C | INPUT − |
| D | PIN 3 OF J101 (DEMODULATOR REFERENCE) |
| E | PIN 4 OF J101 (DEMODULATOR REFERENCE) |
| F | GROUND |
| G | OPEN |
| H | PIN 14 OF J101 |

8 MS-3112E-16-8P (J2) - WIRE DESTINATION

| PIN LETTER | INTERNAL CONNECTION |
|---|---|
| A | CHASSIS GROUND |
| B | + SIGNAL OUT |
| C | − SIGNAL OUT |
| D | FEEDBACK |
| E | 115 V, 60 CPS |
| F | 115 V, 60 CPS |
| G | DEMODULATOR TRANSFER SHIELD |
| H | OPEN |

9 EXACT CONNECTOR LOCATION ON REAR OF CHASSIS TO BE DETERMINED BY SUPPLIER.

10 CHARACTER HEIGHT $1/8 {}^{+1/16}_{-0}$. LETTERING SHALL BE LEGIBLY APPLIED PER ND-1002019.

11 WHEN THE AMPLIFIER IS SOLD INDEPENDENTLY FROM ITS HIGHER ASSEMBLY, IT SHALL PASS ALL OF THE TESTS CALLED OUT IN THE PROCUREMENT SPECIFICATION. THE COMPLETE SPECIFICATION APPLIES ONLY WHEN THE AMPLIFIER IS SOLD INDEPENDENTLY FROM A HIGHER ASSEMBLY AND IS SOLD TO A GOVERNMENT AGENCY

DATA SOURCE:
MASSA DIVISION
HINGHAM, MASS.
AS:
AMPLIFIER DRIVER
MODEL DA-104A

**FOR INFORMATION ONLY**
**CLASS B RELEASE TDR No.** 11209 **DATE** 8/1/63

Ⓕ REPLACED WITH CHANGE BY REV Ⓖ

SEE NOTE 11

| QUANTITY REQUIRED | | | | EFFECTIVITY | ITEM NO | NO. REQD | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|---|
| | | | X | | 2 | | PS 1900069 | PROCUREMENT SPEC |
| | | | 1 | | 1 | | TBA | AMPLIFIER, DRIVER MODEL [illegible] |
| | | | 011 | | | | | |

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900071-011 | | |
| 1900070-011 | 1900000 | -011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ± .005 ANGLES ± 2°
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN [illegible] DATE 11 APR 63
CHECKED [illegible] 23 APR 63
APPROVAL [illegible] Apr 23, 1963
APPROVAL [illegible] 23 APR 63
NASA APPROVAL [illegible]
[illegible] May 8 1963
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

AMPLIFIER, DRIVER

CODE IDENT NO
SIZE E
1900069
SCALE 1:1
SHEET

1900069 F

| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
|---|---|---|---|---|---|
| A | | COMPLETELY REVISED PER MCX 186904 & MARKED PRINT | | 5 JUNE 63 | |
| B1 | | CHANGE IN ACCORDANCE WITH MXC 187894 | — | JUL 63 | |
| C | | CHANGE IN ACCORDANCE WITH MXC 188568. PER TDRR 03872 | | 5 AUG 63 | |

PEQUIREMENTS:

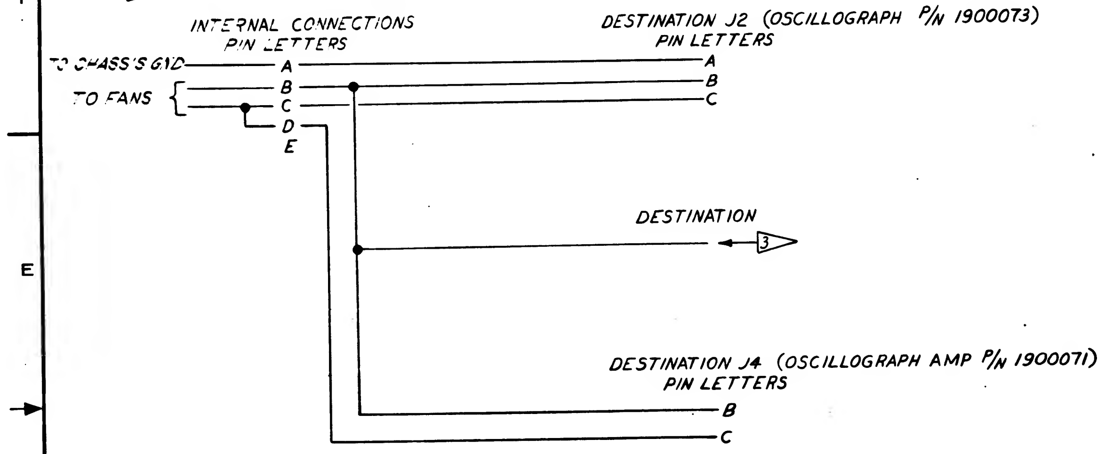
TWO COPIES OF SERVICE MANUALS CONTAINING A SPARE PARTS LIST, SCHEMATIC DIAGRAMS, OPERATING INSTRUCTIONS, MAINTENANCE INSTRUCTIONS AND CALIBRATION INSTRUCTIONS SHALL BE SUPPLIED WITH EACH UNIT. (THIS MANUAL MAY BE COMBINED WITH THE MANUAL FOR OTHER PARTS OF THE RECORDER).

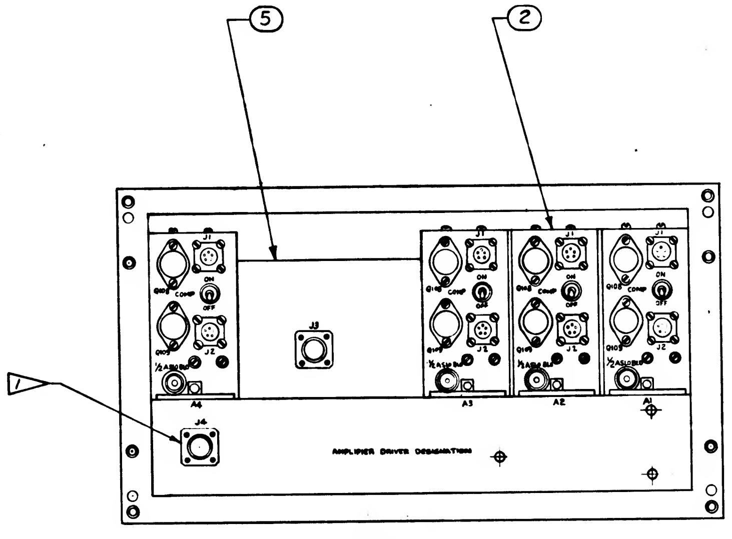
AMPLIFIER OSCILLOGRAPH P/N 1900070, AMPLIFIER OSCILLOGRAPH P/N 1900071, OSCILLOGRAPH P/N 1900072, AND OSCILLOGRAPH P/N 1900073, AND PEN CONTROL, ELECTRIC OSCILLOGRAPH, P/N 1900165 SHALL BE ELECTRICALLY COMPATIBLE WITH EACH OTHER, THEY SHALL BE MATED AND THE FIVE DRAWERS TESTED AS ONE UNIT. THE UNIT SHALL PASS ALL TESTS CALLED OUT IN ND1002205.

3 CONNECT TO J2-E ON DRIVER AMPS P/N 1900069 LOCATED ON OSCILLOGRAPH AMP P/N 1900070 & 1900071.

INTERPRET DRAWING IN ACCORDANCE WITH THE STANDARDS PRESCRIBED BY MIL-D-70327.

PIN LIST FOR CONNECTOR J4 (MS3112E-10-6P)

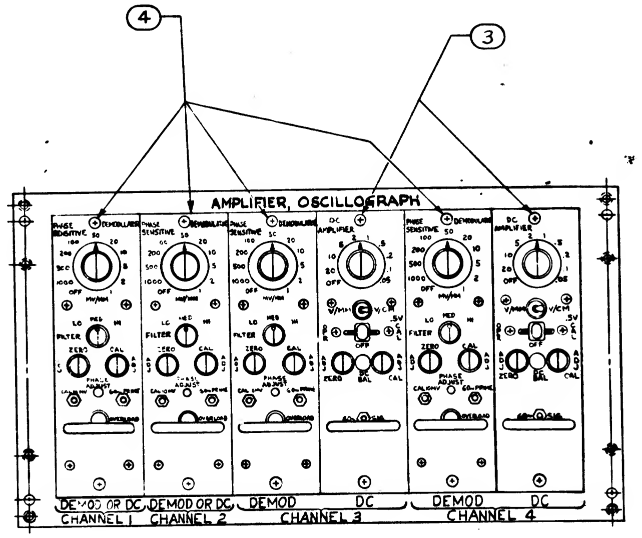

INTERNAL CONNECTIONS PIN LETTERS
DESTINATION J2 (OSCILLOGRAPH P/N 1900073) PIN LETTERS
TO CHASSIS GND
TO FANS
A
B
C
D
E
A
B
C
DESTINATION
3
DESTINATION J4 (OSCILLOGRAPH AMP P/N 1900071) PIN LETTERS
B
C

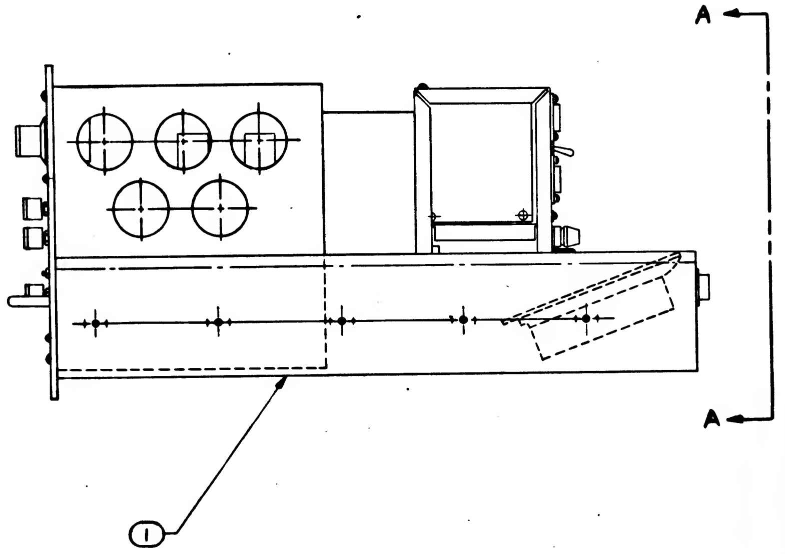


VIEW A-A

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 61269 DATE 7 May 63





| QUANTITY REQUIRED | | | | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | 1 | | 5 | 1900162-011 | PREAMPLIFIER SELECTOR |
| | | | 4 | | 4 | 1900068-011 | DEMODULATOR PHASE SENSITIVE |
| | | | 2 | | 3 | 1900074-011 | PREAMPLIFIER, DC |
| | | | 4 | | 2 | 1900069-011 | AMPLIFIER DRIVER |
| | | | 1 | | 1 | 1900067-011 | RACK-OSCILLOGRAPH |
| | | | 011 | | | | |

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900044-011 | 1900004 | 011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ±.005 ANGLES ±2°
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 15 APR 63
DATE 23 APR 63
CHECKED
APPROVAL R. Rahn Apr 23, 1963
APPROVAL 23 APR 63
NASA APPROVAL
L Godman May 1963
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AMPLIFIER, OSCILLOGRAPH

CODE IDENT NO
SIZE E
1900070
SCALE 1:2
SHEET

1900070 C

INCHES
PHOTOGRAPHIC SCALE ONLY

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |

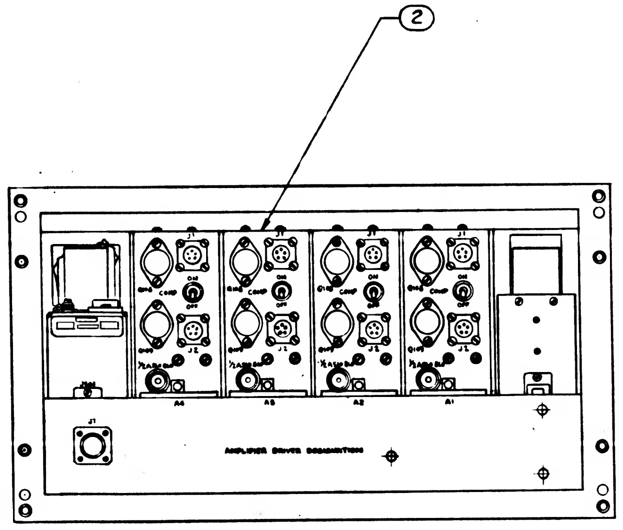
REQUIREMENTS:

THE SUPPLIERS NAME ADDRESS AND PART NUMBER SHALL BE PLACED ON THE OUTSIDE SURFACE OF THE REAR PLATE. THIS INFORMATION SHALL NOT APPEAR ON THE FRONT PANEL.

TWO COPIES OF SERVICE MANUALS CONTAINING A SPARE PARTS LIST, SCHEMATIC DIAGRAMS, OPERATING INSTRUCTIONS, MAINTENANCE INSTRUCTIONS AND CALIBRATION INSTRUCTIONS SHALL BE SUPPLIED WITH EACH UNIT. (THIS MANUAL MAY BE COMBINED WITH THE MANUAL FOR OTHER PARTS OF THE RECORDER).

AMPLIFIER OSCILLOGRAPH P/N 1900070 (2 EACH), CONTROL OSCILLOGRAPH P/N 1900072, AND OSCILLOGRAPH P/N 1900073 SHALL BE MATED AND THE FOUR DRAWERS TESTED AS ONE UNIT. THE UNIT SHALL PASS ALL TESTS CALLED OUT IN ND.

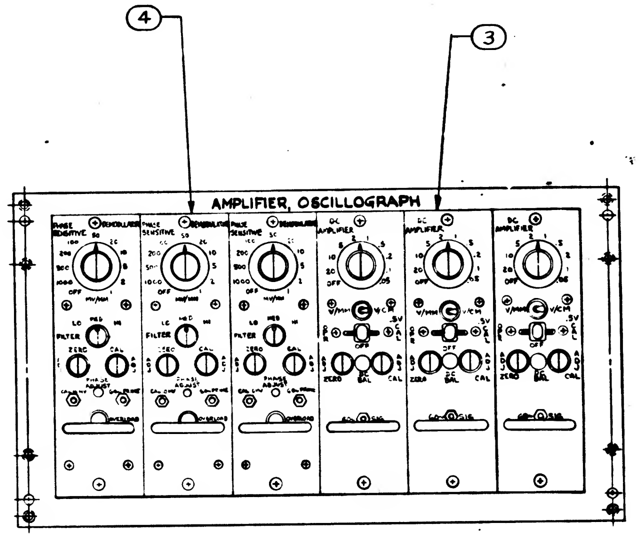
LOCATION OF (3) PHASE SENSITIVE DEMODULATORS P/N 1900068 AND (3) DC PREAMPLIFIERS P/N 1900074 WITHIN RACK IS OPTIONAL.

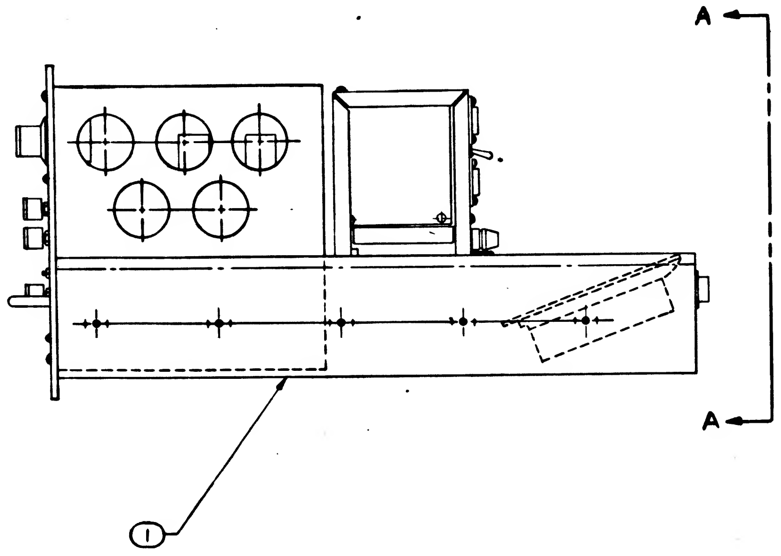


VIEW A·A

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. C1209 DATE 8 May 63





| QUANTITY REQUIRED 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|
| 3 | | 4 | 1900068-0 | DEMODULATOR PHASE SENSITIVE |
| 3 | | 3 | 900074-0 | PREAMPLIFIER, DC |
| 4 | | 2 | 900069-0 | AMPLIFIER DRIVER |
| 1 | | 1 | 900067-0 | RACK-OSCILLOGRAPH |

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900044-011 | 1900004 | 011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS $+\frac{1}{64}$ $-\frac{1}{64}$ DECIMALS +.005 -.005 ANGLES +2° -2°
DO NOT SCALE THIS DRAWING
MATERIAL ——
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 15 APR 63
CHECKED 23 APR 63
APPROVAL Apr 23, 1963
APPROVAL 23 APR 63
NASA APPROVAL
May 1963
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

AMPLIFIER, OSCILLOGRAPH

CODE IDENT NO
SIZE E
1900070
SCALE 1:2
SHEET

1900070
B3

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
|---|---|---|---|---|---|
| A | | REPLACED WITH CHANGE BY REVISION B PER MXC 186905 | 02084 | 25 JUN 63 | G.E.H. / EFS |

PICTURE INCOMPLETE

**FOR INFORMATION ONLY**

**CLASS B RELEASE TDR No.** 0466 **DATE** 5 June 63

REPLACED WITH CHANGE BY REVISION B
PER MXC 186905

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | 4 | | | 1900069 | DRIVER, AMPLIFIER |
| | | | 1 | | | 1900162 | BOX, RELAY |
| | | | 2 | | | 1900068 | PHASE SENSITIVE DEMODULATOR |
| | | | 4 | | | 1900074 | DC PREAMPLIFIER |
| | | | 1 | | | 1900161 | RACK, OSCILLOGRAPH |
| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| QUANTITY REQUIRED | | | | | LIST OF PARTS AND MATERIALS | | |

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900045-011 | 1900004 | -011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — − — DECIMALS + — − — ANGLES + — − —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN A. J. Kuoge DATE 14 MAY 63
CHECKED Hogue 15 MAY 63
APPROVAL R. Rahn May 15, 1963
APPROVAL A. Kodel 15 MAY 63
NASA APPROVAL 4/5/63
L. Gedeman 6/4/63
MIT APPROVAL W. Cooper 6 June 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AMPLIFIER - OSCILLOGRAPH

CODE IDENT NO.
SIZE C
1900071
SCALE ——
SHEET

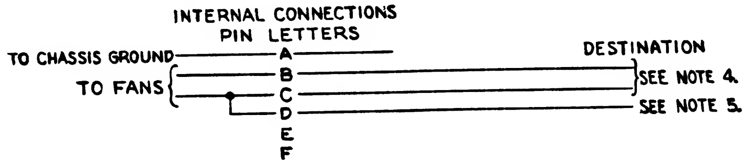
MIL 1078C-P

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

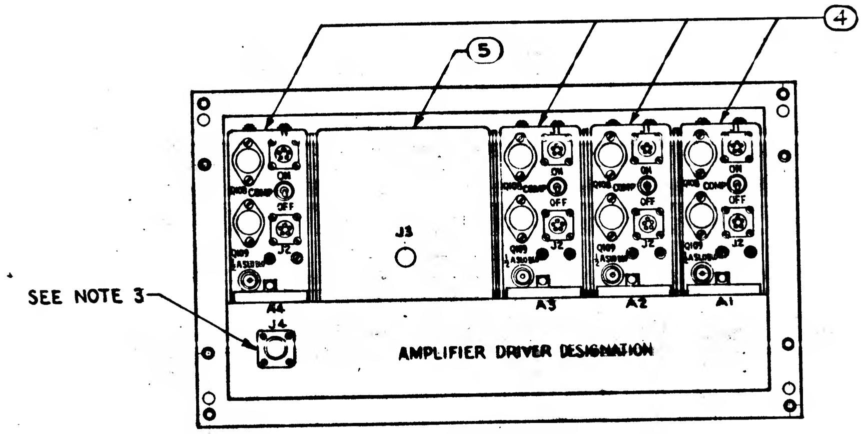
| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| B | | REPLACES REVISION A WITH CHANGE PER MXC 186905 | | 25 JUN 63 | |

REQUIREMENTS:

1. TWO COPIES OF SERVICE MANUALS CONTAINING A SPARE PARTS LIST, SCHEMATIC DIAGRAMS, OPERATING INSTRUCTIONS, MAINTENANCE INSTRUCTIONS AND CALIBRATION INSTRUCTIONS SHALL BE SUPPLIED WITH EACH UNIT (THIS MANUAL MAY BE COMBINED WITH THE MANUAL FOR OTHER PARTS OF THE RECORDER).
2. AMPLIFIER OSCILLOGRAPH P/N 1900070, AMPLIFIER OSCILLOGRAPH P/N 1900071, -OSCILLOGRAPH P/N 1900073 CONTROL, OSCILLOGRAPH P/N 1900072 AND CONTROL, ELECTRIC PEN, OSCILLOGRAPH P/N 1900165 SHALL BE ELECTRICALLY COMPATIBLE WITH EACH OTHER. THEY SHALL BE MATED AND THE FIVE DRAWERS TESTED AS ONE UNIT. THE UNIT SHALL PASS ALL TESTS CALLED OUT IN ND-
3. PIN LIST FOR CONNECTOR MS3112E-10-6P (J4)



4. REFER TO DRAWING OF OSCILLOGRAPH AMPLIFIER P/N 1900070 FOR DESTINATION OF THESE WIRES.
5. CONNECT TO J2-F ON 8 DRIVER AMPLIFIERS P/N 1900069 LOCATED ON OSCILLOGRAPH AMPLIFIER P/N 1900070 & P/N 1900071.

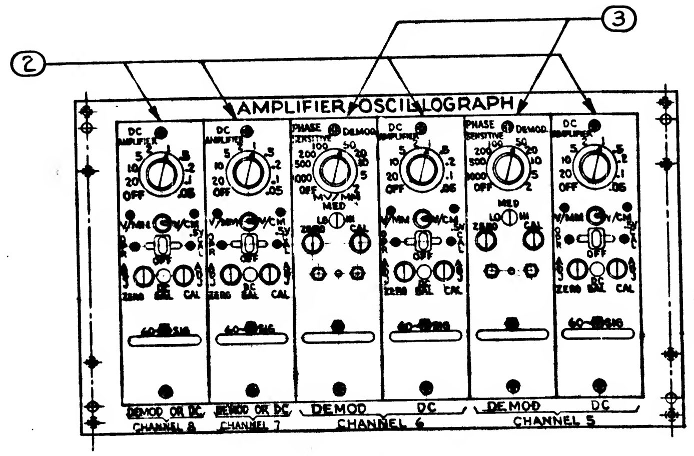


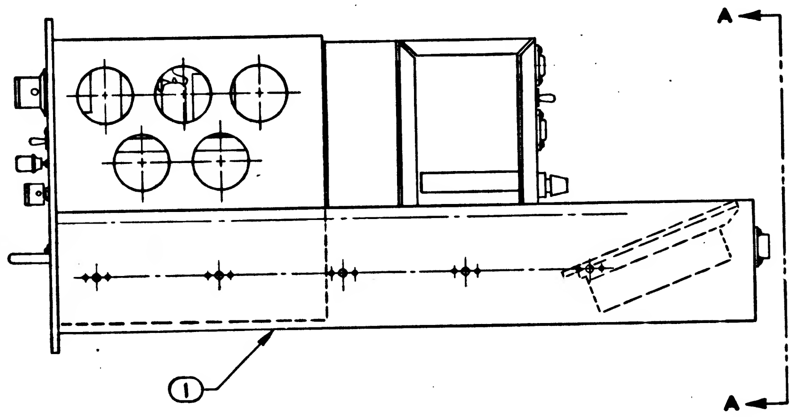
VIEW A-A

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 01466 DATE 5 June 63

REPLACES REVISION A WITH CHANGE PER MXC 186905





| QUANTITY REQUIRED | | | | | | | | LIST OF PARTS AND MATERIALS |
|---|---|---|---|---|---|---|---|---|
| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| | | | 1 | | 5 | 1900162 | PREAMPLIFIER SELECTOR |
| | | | 4 | | 4 | 1900069 | DRIVER AMPLIFIER |
| | | | 2 | | 3 | 1900068 | PHASE SENSITIVE DEMODULATOR |
| | | | 4 | | 2 | 1900074 | D. C. PREAMPLIFIER |
| | | | 1 | | 1 | 1900161 | RACK, OSCILLOGRAPH |

| | |
|---|---|
| APPLICATION | |
| NEXT ASSY | USED ON |
| 1900045-011 | 1900000 |

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ±.005 ANGLES ±2°
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN A.J. FLUDER DATE 14 MAY 63
CHECKED HOGUE 15 MAY 63
APPROVAL R. RAHN 15 MAY 63
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AMPLIFIER-OSCILLOGRAPH

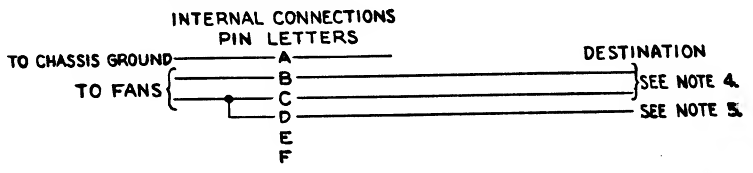
CODE IDENT NO. SIZE E 1900071
SCALE 1:2 SHEET 1 OF 1

1900071 B

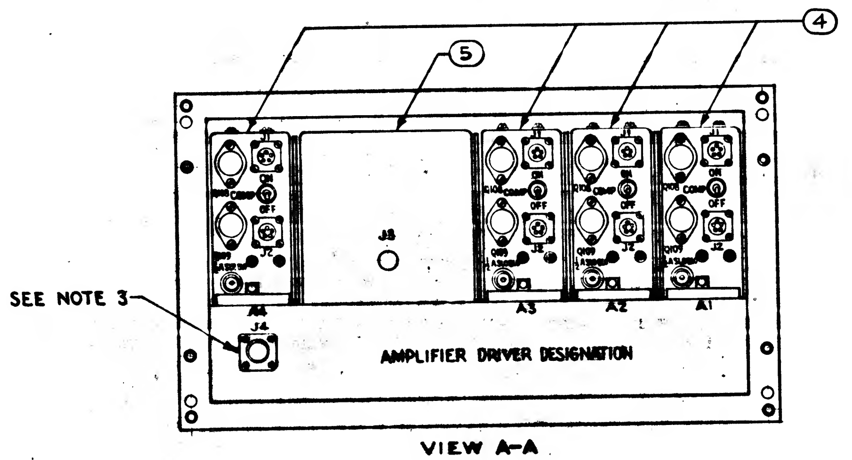
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
|---|---|---|---|---|---|
| B | | REPLACES REVISION A WITH CHANGE PER MXC 186905 | TDRR 0200 | 25 JUN 63 | [illegible] |
| C | | CHANGE IN ACCORDANCE WITH MXC-188569 PER TDRR | | 3 AUG 63 | [illegible] |

## REQUIREMENTS:

1. TWO COPIES OF SERVICE MANUALS CONTAINING A SPARE PARTS LIST, SCHEMATIC DIAGRAMS, OPERATING INSTRUCTIONS, MAINTENANCE INSTRUCTIONS AND CALIBRATION INSTRUCTIONS SHALL BE SUPPLIED WITH EACH UNIT (THIS MANUAL MAY BE COMBINED WITH THE MANUAL FOR OTHER PARTS OF THE RECORDER).
2. AMPLIFIER OSCILLOGRAPH P/N 1900070, AMPLIFIER OSCILLOGRAPH P/N 1900071, -OSCILLOGRAPH P/N 1900073 CONTROL, OSCILLOGRAPH P/N 1900072 AND CONTROL, ELECTRIC PEN, OSCILLOGRAPH P/N 1900165 SHALL BE ELECTRICALLY COMPATIBLE WITH EACH OTHER. THEY SHALL BE MATED AND THE FIVE DRAWERS TESTED AS ONE UNIT. THE UNIT SHALL PASS ALL TESTS CALLED OUT IN ND-1002205.
3. PIN LIST FOR CONNECTOR MS3112E-10-6P (J4)



4. REFER TO DRAWING OF OSCILLOGRAPH AMPLIFIER P/N 1900070 FOR DESTINATION OF THESE WIRES.
5. CONNECT TO J2-F ON 8 DRIVER AMPLIFIERS P/N 1900069 LOCATED ON OSCILLOGRAPH AMPLIFIER P/N 1900070 & P/N 1900071.
6. INTERPRET DRAWING IN ACCORDANCE WITH THE STANDARDS PRESCRIBED BY MIL-D-70327.

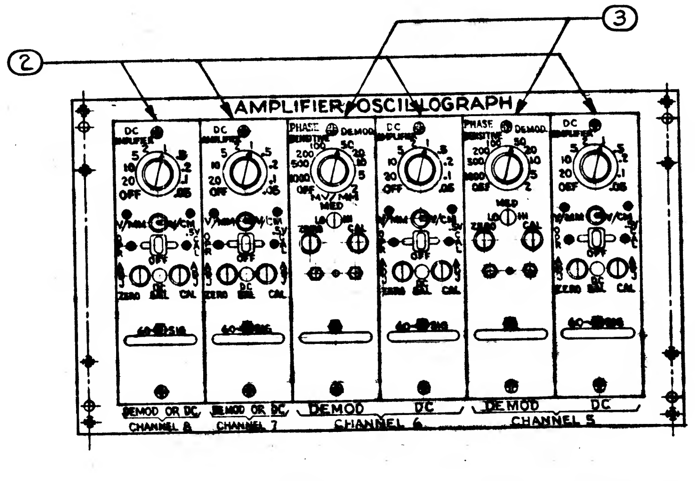


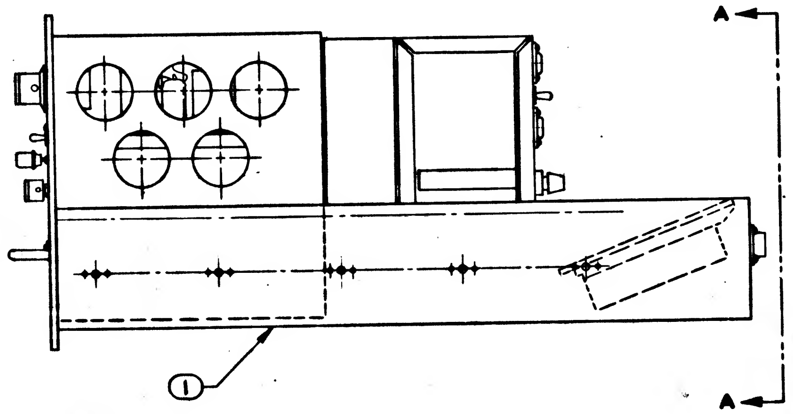
VIEW A-A

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01466 DATE 5 June 63

REPLACES REVISION A WITH CHANGE PER MXC 186905





| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 1 | | 5 | 1900162 | PREAMPLIFIER SELECTOR |
| | | | 4 | | 4 | 1900069 | DRIVER AMPLIFIER |
| | | | 2 | | 3 | 1900068 | PHASE SENSITIVE DEMODULATOR |
| | | | 4 | | 2 | 1900074 | D. C. PREAMPLIFIER |
| | | | 1 | | 1 | 1900161 | RACK, OSCILLOGRAPH |
| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| QUANTITY REQUIRED | | | | | LIST OF PARTS AND MATERIALS | | |

| NEXT ASSY | USED ON |
|---|---|
| 1900065-011 | 1900000 |

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS $\pm \frac{1}{64}$ DECIMALS $\pm .005$ ANGLES $\pm 2°$
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN A.J. Fluegge DATE 14 MAY 63
CHECKED Hogue 15 MAY 63
APPROVAL R. Rahn 15 May 63
APPROVAL 5 July 63
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AMPLIFIER-OSCILLOGRAPH

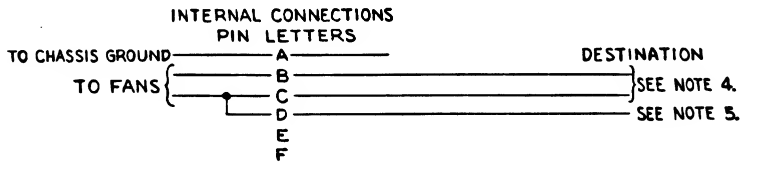
CODE IDENT NO.
SIZE E
1900071
SCALE 1:2
SHEET 1 OF 1

1900071 C

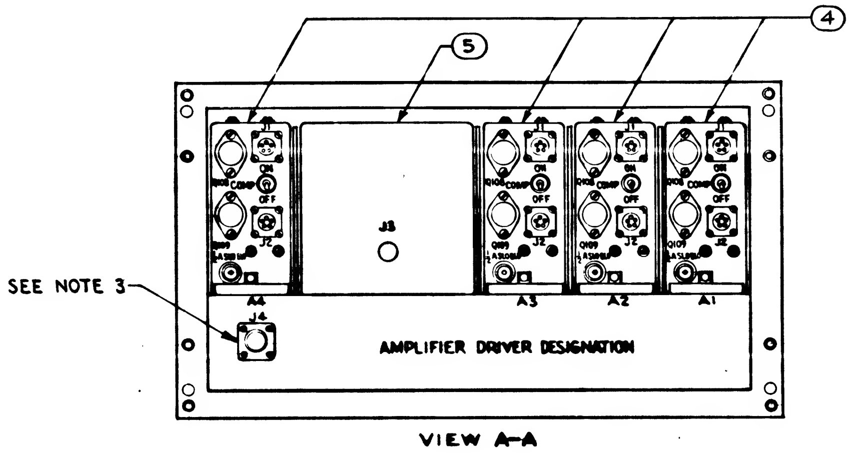
| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| B | | REPLACES REVISION A WITH CHANGE PER MXC 186905 | | 25 [illegible] 63 | |
| C | | CHANGE IN ACCORDANCE WITH MXC-188569 PER TDRR | | 6 AUG 63 | |
| D | | CHANGE IN ACCORDANCE WITH CM-194682 PER TDRR 08804 | | 3 FEB 64 | |

## REQUIREMENTS:

1. TWO COPIES OF SERVICE MANUALS CONTAINING A SPARE PARTS LIST, SCHEMATIC DIAGRAMS, OPERATING INSTRUCTIONS, MAINTENANCE INSTRUCTIONS AND CALIBRATION INSTRUCTIONS SHALL BE SUPPLIED WITH EACH UNIT (THIS MANUAL MAY BE COMBINED WITH THE MANUAL FOR OTHER PARTS OF THE RECORDER).
2. AMPLIFIER OSCILLOGRAPH P/N 1900070-011, AMPLIFIER OSCILLOGRAPH P/N 1900071-011, -OSCILLOGRAPH P/N 1900073-011 CONTROL, OSCILLOGRAPH P/N 1900072-011 AND CONTROL, ELECTRIC PEN, OSCILLOGRAPH P/N 1900165-011 SHALL BE ELECTRICALLY COMPATIBLE WITH EACH OTHER. THEY SHALL BE MATED AND THE FIVE DRAWERS TESTED AS ONE UNIT. THE UNIT SHALL PASS ALL TESTS CALLED OUT IN ND-1002205.
3. PIN LIST FOR CONNECTOR MS3112E-10-6P (J4)



4. REFER TO DRAWING OF OSCILLOGRAPH AMPLIFIER P/N 1900070-011 FOR DESTINATION OF THESE WIRES.
5. CONNECT TO J2-F ON 8 DRIVER AMPLIFIERS P/N 1900069-011 LOCATED ON OSCILLOGRAPH AMPLIFIER P/N 1900070-011 & P/N 1900071-011.
6. INTERPRET DRAWING IN ACCORDANCE WITH THE STANDARDS PRESCRIBED BY MIL-D-70327.

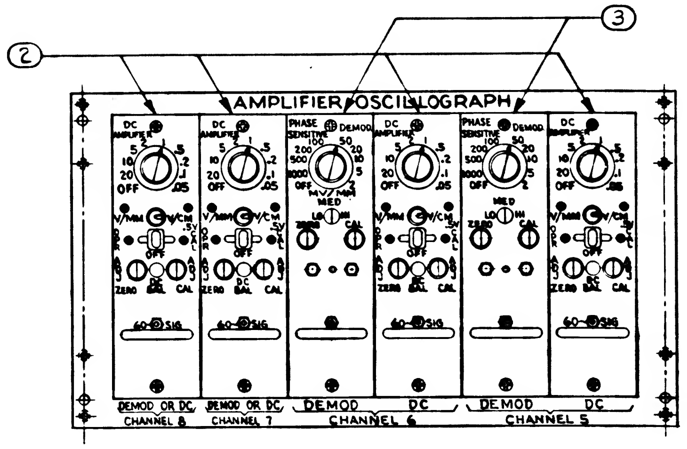


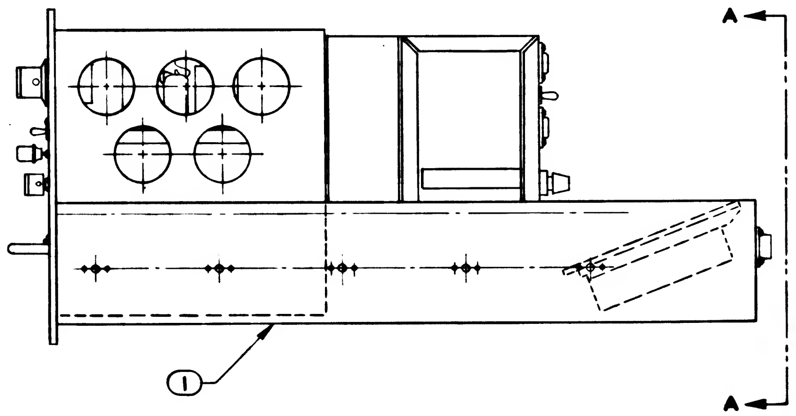
VIEW A-A

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 5146 DATE 6 June 63

REPLACES REVISION A WITH CHANGE PER MXC 186905





| QUANTITY REQUIRED | | | | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | 011 | | | | |
| | | | 1 | | 5 | 1900162-011 | PREAMPLIFIER SELECTOR |
| | | | 4 | | 4 | 1900069-011 | DRIVER AMPLIFIER |
| | | | 2 | | 3 | 1900068-011 | PHASE SENSITIVE DEMODULATOR |
| | | | 4 | | 2 | 1900074-011 | D. C. PREAMPLIFIER |
| | | | 1 | | 1 | 1900161-011 | RACK, OSCILLOGRAPH |

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON |
|---|---|
| 1900045-011 | 1900000 |

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS $\pm\frac{1}{64}$ DECIMALS $\pm.005$ ANGLES $\pm2°$
DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN

DRAWN A.J.FLUDER DATE 14 MAY 63
CHECKED HOGUE 15 MAY 63
APPROVAL R. RAHN 15 MAY 63
APPROVAL [illegible] 16 May 63
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

AMPLIFIER-OSCILLOGRAPH

CODE IDENT NO
SIZE E
1900071
SCALE 1:2
SHEET 1 OF 1

1900071 D

1900071

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
| | | | | | |

PICTURE INCOMPLETE

**FOR INFORMATION ONLY**

**CLASS B RELEASE TDR No.** 01466 **DATE** 5 June 63

| QUANTITY REQUIRED | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| | | | 4 | | | 1900069 | DRIVER, AMPLIFIER |
| | | | 1 | | | 1900162 | BOX, RELAY |
| | | | 2 | | | 1900068 | PHASE SENSITIVE DEMODULATOR |
| | | | 4 | | | 1900074 | DC PREAMPLIFIER |
| | | | 1 | | | 1900161 | RACK, OSCILLOGRAPH |

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900045-011 | 1900004 | -011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

| FRACTIONS | DECIMALS | ANGLES |
|---|---|---|
| + — | + — | + — |
| − — | − — | − — |

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN A. J. Fusee DATE 14-MAY-63
CHECKED Hogue 15 MAY 63
APPROVAL R. Rahn May 15, 1963
APPROVAL A Kodel 15 MAY 63

NASA APPROVAL K Milik 6/5/63
L. Gedeman 6/4/63
MIT APPROVAL W Cooper 5 June 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

AMPLIFIER - OSCILLOGRAPH

CODE IDENT NO.

SIZE C

1900071

SCALE —

SHEET

MIL 1078C—P

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
| B | | REPLACES REVISION A WITH CHANGE PER MXC 18657 | — | 9 AUG 63 | |

**REQUIREMENTS:**

FRONT PANEL HARDWARE
- SYSTEM ON/OFF SWITCH AND INDICATOR LIGHT, RECORDER SECTION MM/SEC-OFF-CM/HR POWER SWITCH AND INDICATOR LIGHT.
- CHART SPEED CONTROLS (PUSH BUTTONS)
- EVENT MARKER BUTTON
- CHART PAPER LOW WARNING LIGHT
- MASTER CONTROL KNOB

WEIGHT 10 LB. APPROX.

OUTSIDE OF CHASSIS MUST BE FREE FROM BURRS AND SHARP EDGES.

THE SUPPLIERS NAME, ADDRESS, AND PART NUMBER, SHALL BE PLACED ON THE OUTSIDE SURFACE OF THE REAR PLATE PER ND 1002019. THIS INFORMATION SHALL NOT APPEAR ON THE FRONT PANEL.

INCANDESCENT LAMPS SHALL BE USED TO ILLUMINATE THE CHART PAPER LOCATED ON OSCILLOGRAPH 1900073.

AMPLIFIER OSCILLOGRAPH P/N 1900070, AMPLIFIER OSCILLOCRAPH P/N 1900071, CONTROL, OSCILLOGRAPH P/N 1900072, CONTROL, ELECTRIC PEN, OSCILLOGRAPH P/N 1900165 AND OSCILLOGRAPH P/N 1900073 SHALL BE ELECTRICALLY COMPATIBLE WITH EACH OTHER. THEY SHALL BE TESTED AS ONE UNIT. THE UNIT SHALL PASS ALL TESTS CALLED OUT IN ND______.

**NOTES:**

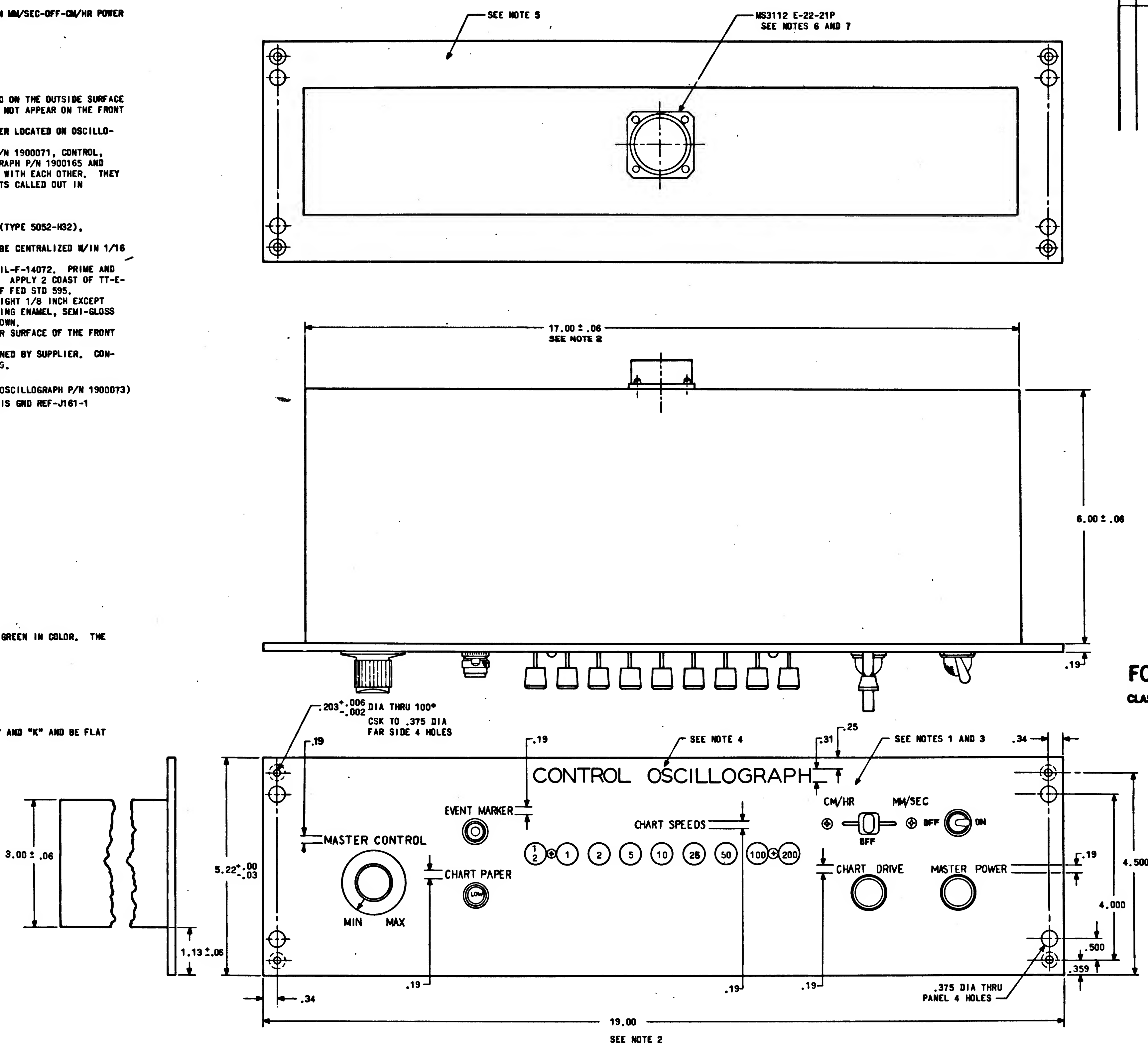
1. MATERIAL - FRONT PANEL: AL ALY PER QQ-A-318, TEMPER H-32 (TYPE 5052-H32), 3/16 THICK.
2. THE 19 AND 17 INCH DIMENSIONS OF PANEL AND CHASSIS SHALL BE CENTRALIZED W/IN 1/16 INCHES AT ASSEMBLY.
3. FRONT PANEL FINISH: APPLY FINISH P513 OF SPECIFICATION MIL-F-14072. PRIME AND FINISH COATS TO BE APPLIED TO PANEL FRONT AND EDGES ONLY. APPLY 2 COAST OF TT-E-529A CLASS B ENAMEL, SEMI GLOSS, LIGHT GRAY COLOR 26440 OF FED STD 595.
4. CHARACTERS (FUTURA DEMIBOLD) PER ND-1002122, CHARACTER HEIGHT 1/8 INCH EXCEPT WHERE OTHERWISE SPECIFIED. SILK SCREEN PER ND-1002019 USING ENAMEL, SEMI-GLOSS INSTRUMENT BLACK, COLOR 514 OF ANA-157. CENTRALIZE AS SHOWN.
5. BORDER AREA WITHIN 9/16 INCH OF THE PANEL EDGE ON THE REAR SURFACE OF THE FRONT PANEL SHALL BE CO-PLANAR AND FREE OF PROTRUSIONS.
6. EXACT CONNECTOR LOCATION ON REAR OF CHASSIS TO BE DETERMINED BY SUPPLIER. CONNECTOR SHALL BE IDENTIFIED ABOVE RECEPTACLE PER ND 1002019.
7. MS3112E-22-21P (J1)

| INTERNAL CONNECTION | WIRE DESIGNATION (J3 ON OSCILLOGRAPH P/N 1900073) | |
|---|---|---|
| A | CHASSIS GND REF-J161-1 | |
| B | B | REF J161-2 |
| C | C | -3 |
| D | D | -4 |
| E | E | -5 |
| F | F | -6 |
| G | G | -7 |
| H | H | -8 |
| J | J | -9 |
| K | K | -10 |
| L | L | -11 |
| M | M | -12 |
| N | N | -13 |
| P | P | -14 |
| R | R | -15 |
| S | | |
| T | | |
| U | | |
| V | | |
| W | | |
| X | | |

THE LENS ON THE MASTER POWER AND CHART DRIVE LAMPS SHALL BE GREEN IN COLOR. THE CHART PAPER - LOW LENS SHALL BE AMBER IN COLOR.

DATA SOURCE:
MASSA DIVISION - COHO ELECTRONICS
HINGHAM, MASS.
AS:
RECORDER CONTROL CU-3

KNOBS: WHERE PRACTICAL, KNOBS SHALL BE PER MS91528 TYPE "F" AND "K" AND BE FLAT BLACK.



FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 02940 DATE 9-5-63

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| QUANTITY REQUIRED | | | | | LIST OF PARTS AND MATERIALS | | |

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900046-011 | 1900004 | -011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

| FRACTIONS | DECIMALS | ANGLES |
|---|---|---|
| + — | ±.005 | + — |
| — — | ±.02 | — — |

DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN FRIEDE DATE 9 APR 63
CHECKED MALIKOWSKI 23 APR 63
APPROVAL 22 Aug 63
APPROVAL 9/3/63
NASA APPROVAL 9/3/63
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

CONTROL
OSCILLOGRAPH

CODE IDENT NO.
SIZE E
1900072
SCALE 1:1
SHEET 1 OF 1

REQUIREMENTS:

FRONT PANEL HARDWARE
- SYSTEM ON/OFF SWITCH AND INDICATOR LIGHT, RECORDER SECTION MM/SEC-OFF-CM/HR POWER SWITCH AND INDICATOR LIGHT.
- CHART SPEED CONTROLS (PUSH BUTTONS)
- EVENT MARKER BUTTON
- CHART PAPER LOW WARNING LIGHT
- MASTER CONTROL KNOB

WEIGHT 10 LB. APPROX.

OUTSIDE OF CHASSIS MUST BE FREE FROM BURRS AND SHARP EDGES.

THE SUPPLIERS NAME, ADDRESS, AND PART NUMBER, SHALL BE PLACED ON THE OUTSIDE SURFACE OF THE REAR PLATE PER ND 1002019. THIS INFORMATION SHALL NOT APPEAR ON THE FRONT PANEL.

INCANDESCENT LAMPS SHALL BE USED TO ILLUMINATE THE CHART PAPER LOCATED ON OSCILLOGRAPH 1900073.

AMPLIFIER OSCILLOGRAPH P/N 1900070, AMPLIFIER OSCILLOGRAPH P/N 1900071, CONTROL, OSCILLOGRAPH P/N 1900072, CONTROL, ELECTRIC PEN, OSCILLOGRAPH P/N 1900165 AND OSCILLOGRAPH P/N 1900073 SHALL BE ELECTRICALLY COMPATIBLE WITH EACH OTHER. THEY SHALL BE TESTED AS ONE UNIT. THE UNIT SHALL PASS ALL TESTS CALLED OUT IN ND1002205.

INTERPRET DRAWING IN ACCORDANCE WITH THE STANDARDS PRESCRIBED BY MIL-D-70327.

NOTES:
1. MATERIAL - FRONT PANEL: AL ALY PER QQ-A-318, TEMPER H-32 (TYPE 5052-H32), 3/16 THICK.
2. THE 19 AND 17 INCH DIMENSIONS OF PANEL AND CHASSIS SHALL BE CENTRALIZED W/IN 1/16 INCHES AT ASSEMBLY.
3. FRONT PANEL FINISH: APPLY FINISH P513 OF SPECIFICATION MIL-F-14072. PRIME AND FINISH COATS TO BE APPLIED TO PANEL FRONT AND EDGES ONLY. APPLY 2 COAST OF TT-E-529A CLASS B ENAMEL, SEMI GLOSS, LIGHT GRAY COLOR 26440 OF FED STD 595.
4. CHARACTERS (FUTURA DEMIBOLD) PER ND-1002122, CHARACTER HEIGHT 1/8 INCH EXCEPT WHERE OTHERWISE SPECIFIED. SILK SCREEN PER ND-1002019 USING ENAMEL, SEMI-GLOSS INSTRUMENT BLACK, COLOR 514 OF ANA-157. CENTRALIZE AS SHOWN.
5. BORDER AREA WITHIN 9/16 INCH OF THE PANEL EDGE ON THE REAR SURFACE OF THE FRONT PANEL SHALL BE CO-PLANAR AND FREE OF PROTRUSIONS.
6. CONNECTOR SHALL BE IDENTIFIED ABOVE RECEPTACLE PER ND1002019
7. MS3112E-22-21P (J1)

| INTERNAL CONNECTION | WIRE DESIGNATION (J3 ON OSCILLOGRAPH P/N 1900073) | |
|---|---|---|
| A | | CHASSIS GND REF-J161-1 |
| B | B | REF J161-2 |
| C | C | -3 |
| D | D | -4 |
| E | E | -5 |
| F | F | -6 |
| G | G | -7 |
| H | H | -8 |
| J | J | -9 |
| K | K | -10 |
| L | L | -11 |
| M | M | -12 |
| N | N | -13 |
| P | P | -14 |
| R | R | -15 |
| S | | |
| T | | |
| U | U | |
| V | | |
| W | | |
| X | | |

THE LENS ON THE MASTER POWER AND CHART DRIVE LAMPS SHALL BE GREEN IN COLOR. THE CHART PAPER - LOW LENS SHALL BE AMBER IN COLOR.

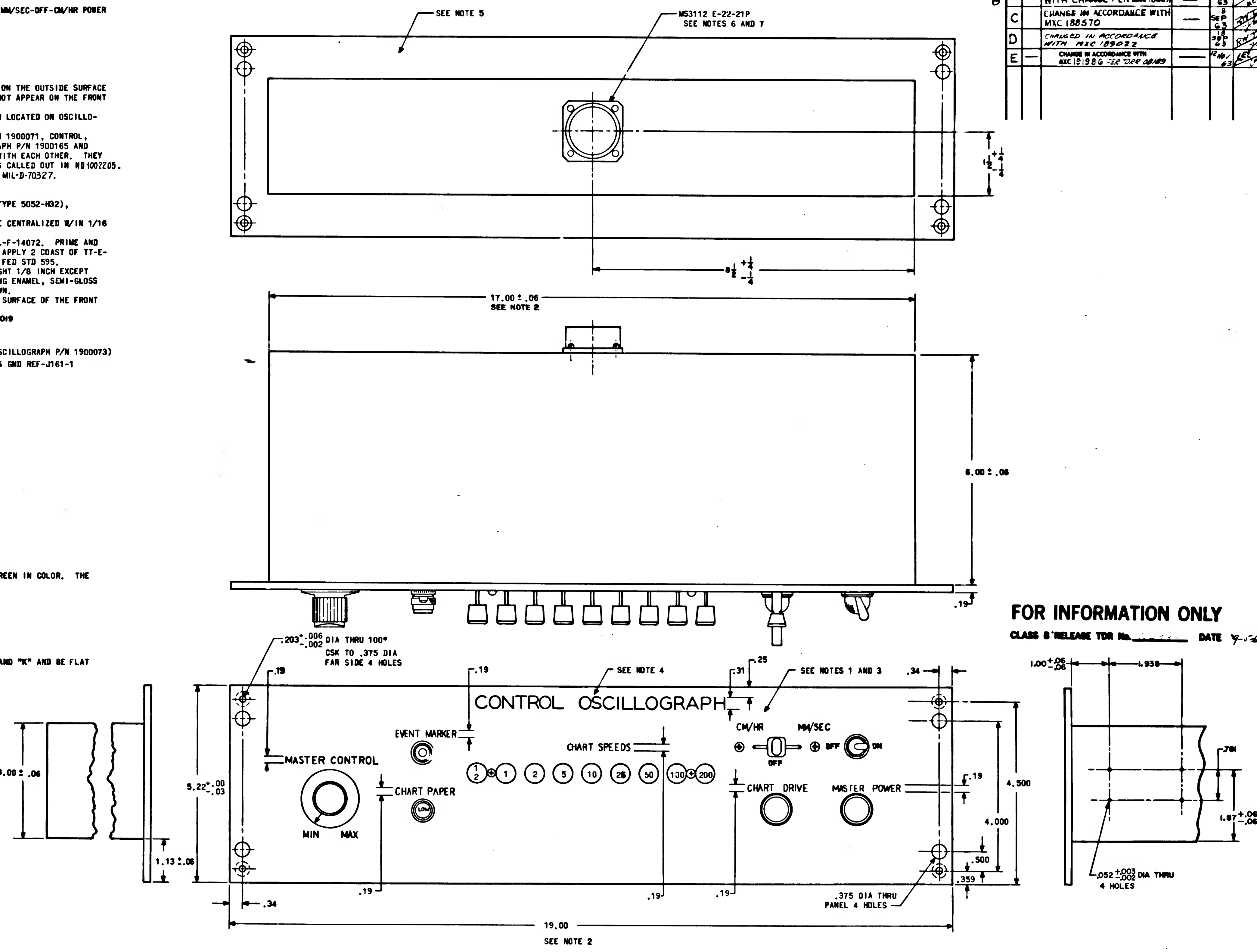
DATA SOURCE:
MASSA DIVISION - COHO ELECTRONICS
HINGHAM, MASS.

AS:
RECORDER CONTROL CU-3

KNOBS: WHERE PRACTICAL, KNOBS SHALL BE PER MS91528 TYPE "F" AND "K" AND BE FLAT BLACK.

REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
|---|---|---|---|---|---|
| B | | REPLACES REVISION A WITH CHANGE PER MXC 18687 | — | 9 AUG 63 | |
| C | | CHANGE IN ACCORDANCE WITH MXC 188570 | — | 8 SEP 63 | RWJ |
| D | | CHANGED IN ACCORDANCE WITH MXC 189022 | | 18 SEP 63 | RWJ |
| E | — | CHANGE IN ACCORDANCE WITH MXC 191986 PER TDRR 08169 | — | 12 NOV 63 | LEL |



**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. ____ DATE 9-5-63

REPLACES REV( )WITH CHANGE

|  |  |  | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| QUANTITY REQUIRED | | | | | LIST OF PARTS AND MATERIALS | | |

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900046-011 | 1900004 | -011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − − −
DECIMALS ±.005 ±.02
ANGLES + − − −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN FRIEDE DATE 9 APR 63
CHECKED MALIKOWSKI 23 APR 63
APPROVAL 23 Apr 63
APPROVAL 7/3/63
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CONTROL
OSCILLOGRAPH

CODE IDENT NO.
SIZE E
1900072
SCALE 1:1
SHEET 1 OF 1

1900072E

REQUIREMENTS:

FRONT PANEL HARDWARE
- SYSTEM ON/OFF SWITCH AND INDICATOR LIGHT, RECORDER SECTION MM/SEC-OFF-CM/HR POWER SWITCH AND INDICATOR LIGHT.
- CHART SPEED CONTROLS (PUSH BUTTONS)
- EVENT MARKER BUTTON
- CHART PAPER LOW WARNING LIGHT
- MASTER CONTROL KNOB

WEIGHT 10 LB. APPROX.

OUTSIDE OF CHASSIS MUST BE FREE FROM BURRS AND SHARP EDGES.

THE SUPPLIERS NAME, ADDRESS, AND PART NUMBER, SHALL BE PLACED ON THE OUTSIDE SURFACE OF THE REAR PLATE PER ND 1002019. THIS INFORMATION SHALL NOT APPEAR ON THE FRONT PANEL.

INCANDESCENT LAMPS SHALL BE USED TO ILLUMINATE THE CHART PAPER LOCATED ON OSCILLOGRAPH 1900073.

AMPLIFIER OSCILLOGRAPH P/N 1900070-011, AMPLIFIER OSCILLOGRAPH P/N 1900071-011, CONTROL OSCILLOGRAPH P/N 1900072-011, CONTROL, ELECTRIC PEN, OSCILLOGRAPH P/N 1900165-011 AND OSCILLOGRAPH P/N 1900073-011, SHALL BE ELECTRICALLY COMPATIBLE WITH EACH OTHER. THEY SHALL BE TESTED AS ONE UNIT EXCEPT AS SPECIFIED IN NOTE 8. THE UNITS SHALL PASS ALL TESTS CALLED OUT IN ND1002205.

INTERPRET DRAWING IN ACCORDANCE WITH THE STANDARDS PRESCRIBED BY MIL-D-70327.

NOTES:

1. MATERIAL - FRONT PANEL: AL ALY PER QQ-A-318, TEMPER H-32 (TYPE 5052-H32), 3/16 THICK.
2. THE 19 AND 17 INCH DIMENSIONS OF PANEL AND CHASSIS SHALL BE CENTRALIZED W/IN 1/16 INCHES AT ASSEMBLY.
3. FRONT PANEL FINISH: APPLY FINISH P513 OF SPECIFICATION MIL-F-14072. PRIME AND FINISH COATS TO BE APPLIED TO PANEL FRONT AND EDGES ONLY. APPLY 2 COAST OF TT-E-529A CLASS B ENAMEL, SEMI GLOSS, LIGHT GRAY COLOR 26440 OF FED STD 595.
4. CHARACTERS (FUTURA DEMIBOLD) PER ND-1002122, CHARACTER HEIGHT 1/8 INCH EXCEPT WHERE OTHERWISE SPECIFIED. SILK SCREEN PER ND-1002019 USING ENAMEL, SEMI-GLOSS INSTRUMENT BLACK, COLOR 514 OF ANA-157. CENTRALIZE AS SHOWN.
5. BORDER AREA WITHIN 9/16 INCH OF THE PANEL EDGE ON THE REAR SURFACE OF THE FRONT PANEL SHALL BE CO-PLANAR AND FREE OF PROTRUSIONS.
6. CONNECTOR SHALL BE IDENTIFIED ABOVE RECEPTACLE PER ND1002019

7. MS3112E-22-21P (J1)

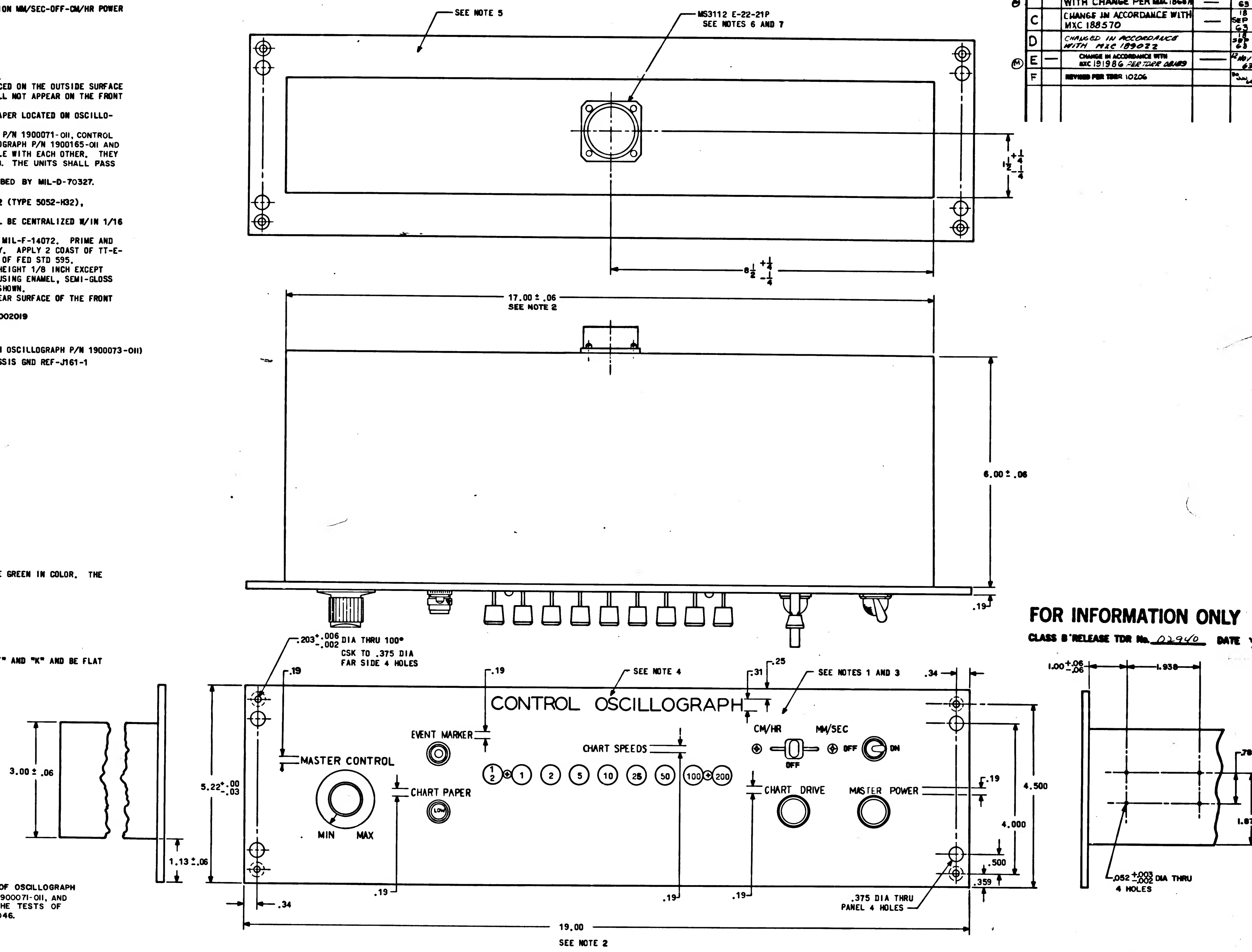
| INTERNAL CONNECTION | WIRE DESIGNATION (J3 ON OSCILLOGRAPH P/N 1900073-011) | |
|---|---|---|
| A | CHASSIS GND REF-J161-1 | |
| B | B | REF J161-2 |
| C | C | -3 |
| D | D | -4 |
| E | E | -5 |
| F | F | -6 |
| G | G | -7 |
| H | H | -8 |
| J | J | -9 |
| K | K | -10 |
| L | L | -11 |
| M | M | -12 |
| N | N | -13 |
| P | P | -14 |
| R | R | -15 |
| S | | |
| T | | |
| U | U | |
| V | | |
| W | | |
| X | | |

THE LENS ON THE MASTER POWER AND CHART DRIVE LAMPS SHALL BE GREEN IN COLOR. THE CHART PAPER - LOW LENS SHALL BE AMBER IN COLOR.

DATA SOURCE:
MASSA DIVISION - COHO ELECTRONICS
HINGHAM, MASS.
AS:
RECORDER CONTROL CU-3

KNOBS: WHERE PRACTICAL, KNOBS SHALL BE PER MS91528 TYPE "F" AND "K" AND BE FLAT BLACK.

8. WHEN THE OSCILLOGRAPH CONTROL IS SOLD INDEPENDENTLY OF OSCILLOGRAPH 1900073-011, OSCILLOGRAPH AMPLIFIERS 1900070-011 AND 1900071-011, AND ELECTRIC PEN CONTROL 1900165-011, IT SHALL PASS ONLY THE TESTS OF SECTION 4 OF THE PROCUREMENT SPECIFICATION PS-1900046.



FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 02940 DATE 9-5-63

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
| B | | REPLACES REVISION A WITH CHANGE PER MXC 18687 | — | 9 AUG 63 | MEM |
| C | | CHANGE IN ACCORDANCE WITH MXC 188570 | — | 18 SEP 63 | R.W.T. |
| D | | CHANGED IN ACCORDANCE WITH MXC 189022 | | 18 SEP 63 | R.W.T. |
| E | — | CHANGE IN ACCORDANCE WITH MXC 191986 PER TDRR 08169 | — | 12 NOV 63 | LEL |
| F | | REVISED PER TDRR 10206 | | 30 JUN 64 | PBR |

Ⓑ REPLACES REV(A) WITH CHANGE

SEE NOTE 8

| QUANTITY REQUIRED | | | | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | X | | 2 | PS-1900046 | PROCUREMENT SPECIFICATION |
| | | | 1 | | 1 | | CONTROL OSCILLOGRAPH (MODEL NO. CU-3/51) |
| | | | 011 | | | | |

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900046-011 | 1900000 | -011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — − —
DECIMALS ±.005 ±.02
ANGLES + − − −
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN FRIEDE DATE 5 APR 63
CHECKED A. ALIKOWSKI 23 APR 63
APPROVAL 22 Apr 63
APPROVAL 7/4/63
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CONTROL
OSCILLOGRAPH

CODE IDENT NO.
SIZE E
1900072
SCALE 1:1
SHEET 1 OF 1

1900072F

REQUIREMENTS:

FRONT PANEL HARDWARE
- SYSTEM ON/OFF SWITCH AND INDICATOR LIGHT, RECORDER SECTION MM/SEC-OFF-CM/HR POWER SWITCH AND INDICATOR LIGHT.
- CHART SPEED CONTROLS (PUSH BUTTONS)
- EVENT MARKER BUTTON
- CHART PAPER LOW WARNING LIGHT
- MASTER CONTROL KNOB

WEIGHT 10 LB. APPROX.

OUTSIDE OF CHASSIS MUST BE FREE FROM BURRS AND SHARP EDGES.

THE SUPPLIERS NAME, ADDRESS, AND PART NUMBER, SHALL BE PLACED ON THE OUTSIDE SURFACE OF THE REAR PLATE PER ND 1002019. THIS INFORMATION SHALL NOT APPEAR ON THE FRONT PANEL.

INCANDESCENT LAMPS SHALL BE USED TO ILLUMINATE THE CHART PAPER LOCATED ON OSCILLOGRAPH 1900073.

AMPLIFIER OSCILLOGRAPH P/N 1900070-011 OR -021, AMPLIFIER OSCILLOGRAPH P/N 1900071-011 OR-021, CONTROL OSCILLOGRAPH P/N 1900072-011, CONTROL, ELECTRIC PEN, OSCILLOGRAPH P/N 1900165 AND OSCILLOGRAPH P/N 1900073-011, SHALL BE ELECTRICALLY COMPATIBLE WITH EACH OTHER. THEY SHALL BE TESTED AS ONE UNIT EXCEPT AS SPECIFIED IN NOTE 8. THE UNITS SHALL PASS ALL TESTS CALLED OUT IN ND1002205.

INTERPRET DRAWING IN ACCORDANCE WITH THE STANDARDS PRESCRIBED BY MIL-D-70327.

NOTES:
1. MATERIAL - FRONT PANEL: AL ALY PER QQ-A-318, TEMPER H-32 (TYPE 5052-H32), 3/16 THICK.
2. THE 19 AND 17 INCH DIMENSIONS OF PANEL AND CHASSIS SHALL BE CENTRALIZED W/IN 1/16 INCHES AT ASSEMBLY.
3. FRONT PANEL FINISH: APPLY FINISH P513 OF SPECIFICATION MIL-F-14072. PRIME AND FINISH COATS TO BE APPLIED TO PANEL FRONT AND EDGES ONLY. APPLY 2 COAST OF TT-E-529A CLASS B ENAMEL, SEMI GLOSS, LIGHT GRAY COLOR 26440 OF FED STD 595.
4. CHARACTERS (FUTURA DEMIBOLD) PER ND-1002122, CHARACTER HEIGHT 1/8 INCH EXCEPT WHERE OTHERWISE SPECIFIED. SILK SCREEN PER ND-1002019 USING ENAMEL, SEMI-GLOSS INSTRUMENT BLACK, COLOR 514 OF ANA-157. CENTRALIZE AS SHOWN.
5. BORDER AREA WITHIN 9/16 INCH OF THE PANEL EDGE ON THE REAR SURFACE OF THE FRONT PANEL SHALL BE CO-PLANAR AND FREE OF PROTRUSIONS.
6. CONNECTOR SHALL BE IDENTIFIED ABOVE RECEPTACLE PER ND1002019

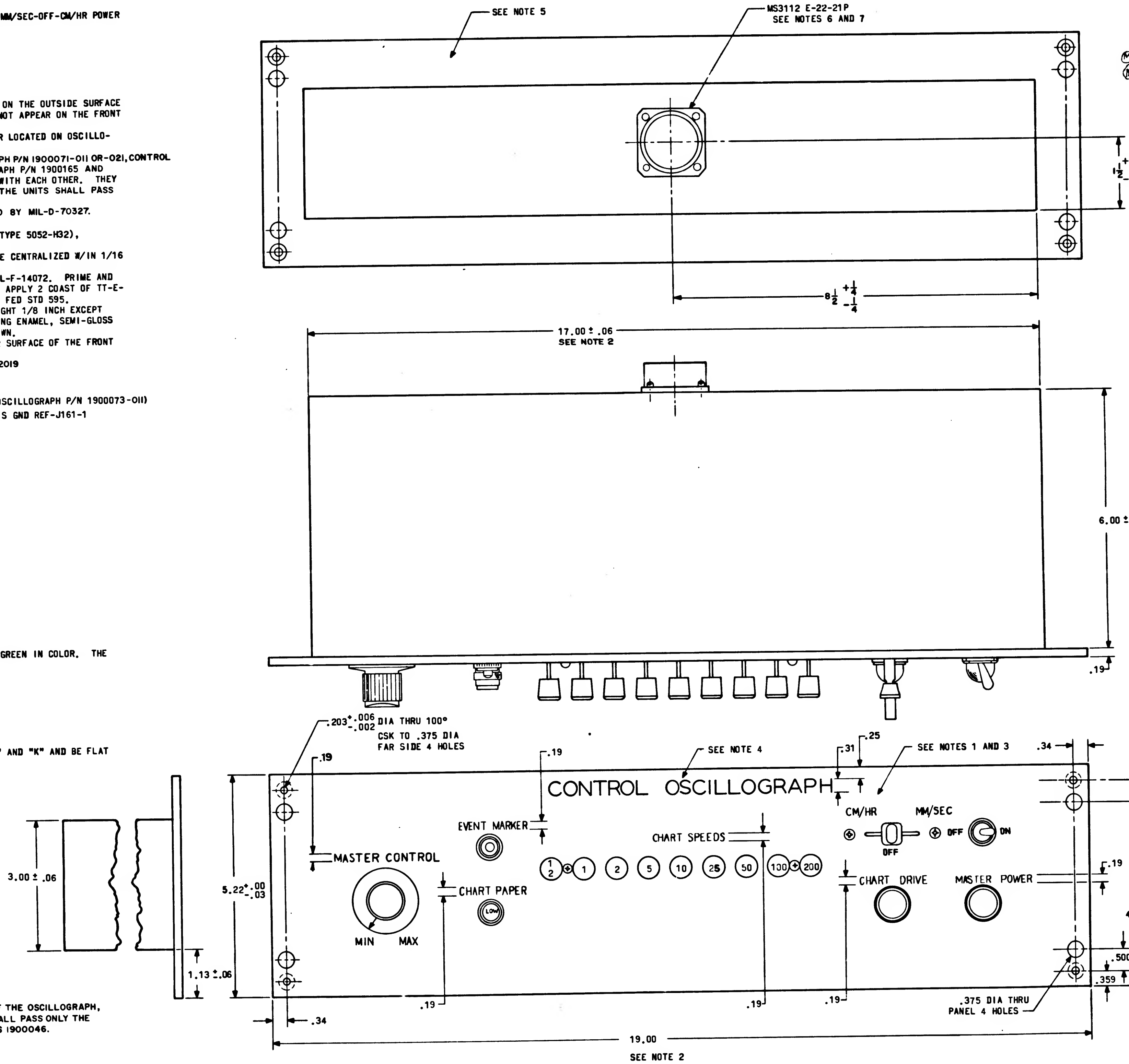
7. MS3112E-22-21P (J1)

| INTERNAL CONNECTION | WIRE DESIGNATION (J3 ON OSCILLOGRAPH P/N 1900073-011) | |
|---|---|---|
| A | | CHASSIS GND REF-J161-1 |
| B | B | REF J161-2 |
| C | C | -3 |
| D | D | -4 |
| E | E | -5 |
| F | F | -6 |
| G | G | -7 |
| H | H | -8 |
| J | J | -9 |
| K | K | -10 |
| L | L | -11 |
| M | M | -12 |
| N | N | -13 |
| P | P | -14 |
| R | R | -15 |
| S | | |
| T | | |
| U | U | |
| V | | |
| W | | |
| X | | |

THE LENS ON THE MASTER POWER AND CHART DRIVE LAMPS SHALL BE GREEN IN COLOR. THE CHART PAPER - LOW LENS SHALL BE AMBER IN COLOR.

DATA SOURCE:
MASSA DIVISION - COHO ELECTRONICS
HINGHAM, MASS.
AS:
RECORDER CONTROL CU-3

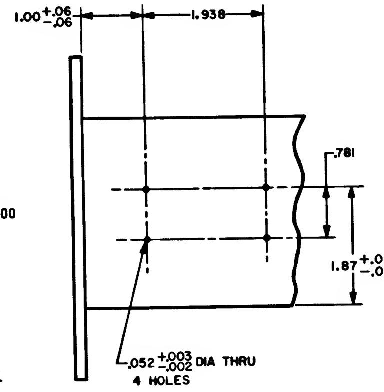
KNOBS: WHERE PRACTICAL, KNOBS SHALL BE PER MS91528 TYPE "F" AND "K" AND BE FLAT BLACK.



| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD |
|---|---|---|---|---|---|
| B | | REPLACES REVISION A WITH CHANGE PER MXC 186870 | — | 9 AUG 63 | MEM |
| C | | CHANGE IN ACCORDANCE WITH MXC 188570 | — | 18 SEP 63 | R.W.J. |
| D | | CHANGED IN ACCORDANCE WITH MXC 189022 | | 18 SEP 63 | R.W.J. |
| E | — | CHANGE IN ACCORDANCE WITH MXC 191986 PER TORR 08189 | — | 12 NOV 63 | LEL |
| F | | REVISED PER TORR 10206 | | 30 JUN 64 | PBR |
| G | | CHANGED IN ACCORDANCE WITH CM-304038 TORR 14194 | — | 27 OCT 64 | PHG CW |

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. ______ DATE 9-5-63



8. WHEN THE OSCILLOGRAPH CONTROL IS SOLD INDEPENDENTLY OF THE OSCILLOGRAPH, OSCILLOGRAPH AMPLIFIERS, AND ELECTRIC PEN CONTROL IT SHALL PASS ONLY THE TESTS OF SECTION 4 OF THE PROCUREMENT SPECIFICATION PS 1900046.

Ⓔ REPLACES REV(A) WITH CHANGE

SEE NOTE 8

LIST OF PARTS AND MATERIALS

| QUANTITY REQUIRED 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|
| X | | 2 | PS-1900046 | PROCUREMENT SPECIFICATION |
| 1 | | 1 | | CONTROL OSCILLOGRAPH (MODEL NO. CU-3/51) |

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900046-011 | 1900000 | -011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — — —
DECIMALS ±.005 ±.02
ANGLES + — — —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN FRIEDE DATE 9APR63
MALIKOWSKI 23 APR 63
CHECKED
APPROVAL 23 Apr 63
APPROVAL 2-3-63
NASA APPROVAL 3/5/64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON TEXAS

CONTROL OSCILLOGRAPH

CODE IDENT NO
SIZE E
1900072
SCALE 1:1
SHEET 1 OF 1

1900072

REQUIREMENTS:

FRONT PANEL HARDWARE
- SYSTEM ON/OFF SWITCH AND INDICATOR LIGHT, RECORDER SECTION MM/SEC-OFF-CM/HR POWER SWITCH AND INDICATOR LIGHT.
- CHART SPEED CONTROLS (PUSH BUTTONS)
- EVENT MARKER BUTTON
- CHART PAPER LOW WARNING LIGHT
- MASTER CONTROL KNOB

WEIGHT 10 LB. APPROX.

OUTSIDE OF CHASSIS MUST BE FREE FROM BURRS AND SHARP EDGES.

THE SUPPLIERS NAME, ADDRESS, AND PART NUMBER, SHALL BE PLACED ON THE OUTSIDE SURFACE OF THE REAR PLATE PER ND 1002019. THIS INFORMATION SHALL NOT APPEAR ON THE FRONT PANEL.

INCANDESCENT LAMPS SHALL BE USED TO ILLUMINATE THE CHART PAPER LOCATED ON OSCILLOGRAPH 1900073.

AMPLIFIER OSCILLOGRAPH P/N 1900070-011 OR-021, AMPLIFIER OSCILLOGRAPH P/N 1900071-011 OR-021, CONTROL OSCILLOGRAPH P/N 1900072-011, CONTROL, ELECTRIC PEN, OSCILLOGRAPH P/N 1900165 AND OSCILLOGRAPH P/N 1900073-011, SHALL BE ELECTRICALLY COMPATIBLE WITH EACH OTHER. THEY SHALL BE TESTED AS ONE UNIT EXCEPT AS SPECIFIED IN NOTE 8. THE UNITS SHALL PASS ALL TESTS CALLED OUT IN ND1002205.

INTERPRET DRAWING IN ACCORDANCE WITH THE STANDARDS PRESCRIBED BY MIL-D-70327.

NOTES:

1. MATERIAL - FRONT PANEL: AL ALY PER QQ-A-318, TEMPER H-32 (TYPE 5052-H32), 3/16 THICK.
2. THE 19 AND 17 INCH DIMENSIONS OF PANEL AND CHASSIS SHALL BE CENTRALIZED W/IN 1/16 INCHES AT ASSEMBLY.
3. FRONT PANEL FINISH: APPLY FINISH P513 OF SPECIFICATION MIL-F-14072. PRIME AND FINISH COATS TO BE APPLIED TO PANEL FRONT AND EDGES ONLY. APPLY 2 COAST OF TT-E-529A CLASS B ENAMEL, SEMI GLOSS, LIGHT GRAY COLOR 26440 OF FED STD 595.
4. CHARACTERS (FUTURA DEMIBOLD) PER ND-1002122, CHARACTER HEIGHT 1/8 INCH EXCEPT WHERE OTHERWISE SPECIFIED. SILK SCREEN PER ND-1002019 USING ENAMEL, SEMI-GLOSS INSTRUMENT BLACK, COLOR 514 OF ANA-157. CENTRALIZE AS SHOWN.
5. BORDER AREA WITHIN 9/16 INCH OF THE PANEL EDGE ON THE REAR SURFACE OF THE FRONT PANEL SHALL BE CO-PLANAR AND FREE OF PROTRUSIONS.
6. CONNECTOR SHALL BE IDENTIFIED ABOVE RECEPTACLE PER ND1002019
7. MS3112E-22-21P (J1)

| INTERNAL CONNECTION | WIRE DESIGNATION (J3 ON OSCILLOGRAPH P/N 1900073-011) | |
|---|---|---|
| A | CHASSIS GND REF-J161-1 | |
| B | B | REF J161-2 |
| C | C | -3 |
| D | D | -4 |
| E | E | -5 |
| F | F | -6 |
| G | G | -7 |
| H | H | -8 |
| J | J | -9 |
| K | K | -10 |
| L | L | -11 |
| M | M | -12 |
| N | N | -13 |
| P | P | -14 |
| R | R | -15 |
| S | | |
| T | | |
| U | U | |
| V | | |
| W | | |
| X | | |

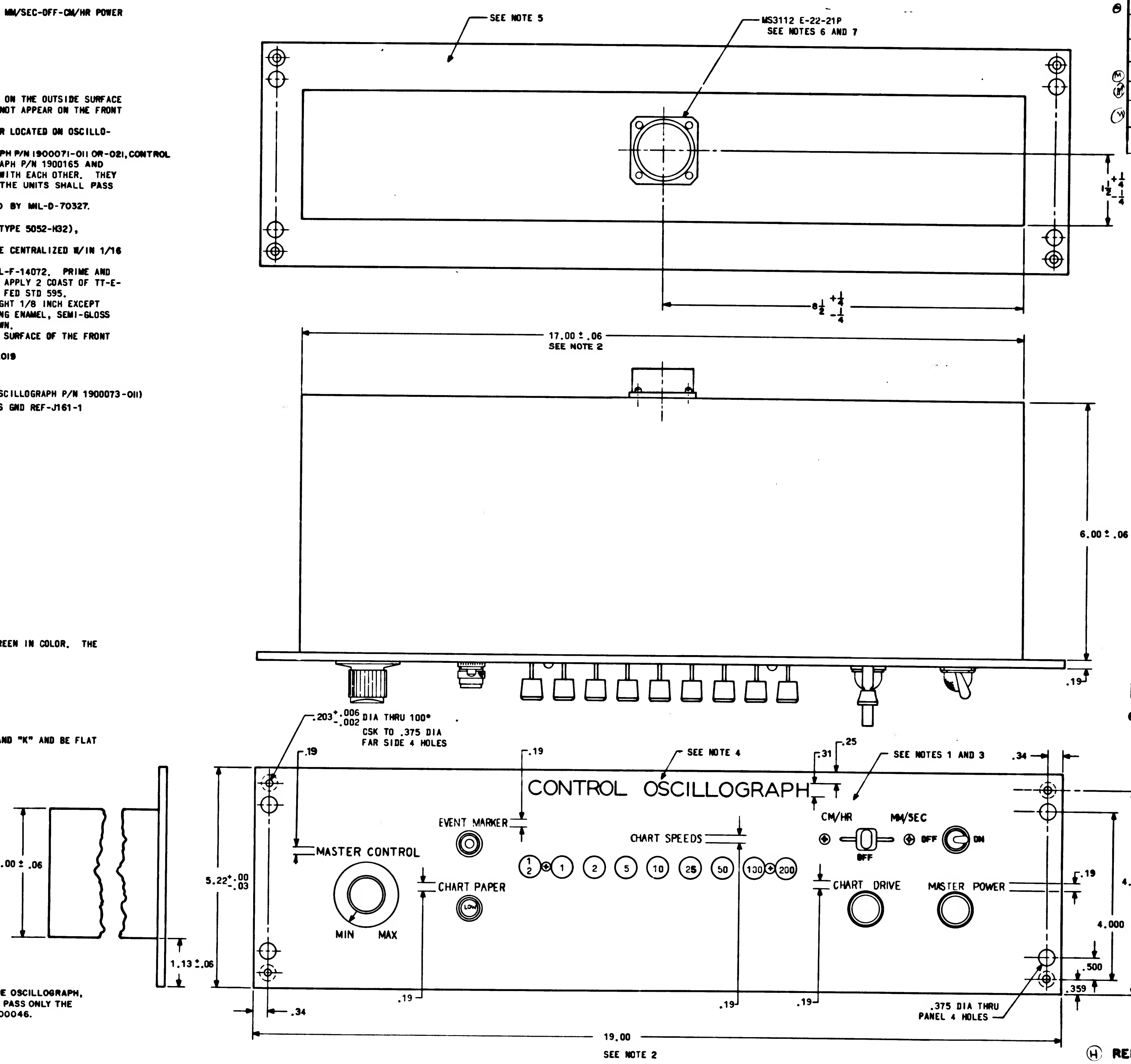
THE LENS ON THE MASTER POWER AND CHART DRIVE LAMPS SHALL BE GREEN IN COLOR. THE CHART PAPER - LOW LENS SHALL BE AMBER IN COLOR.

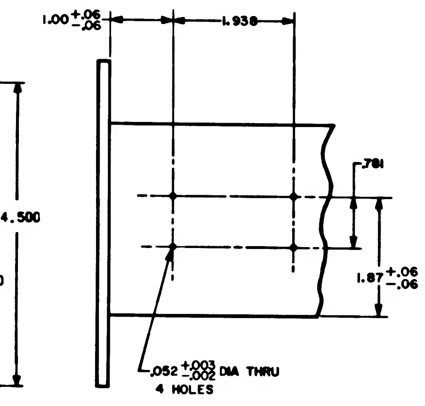
DATA SOURCE:
MASSA DIVISION - COHO ELECTRONICS
HINGHAM, MASS.

AS:
RECORDER CONTROL CU-3

KNOBS: WHERE PRACTICAL, KNOBS SHALL BE PER MS91528 TYPE "F" AND "K" AND BE FLAT BLACK.

8. WHEN THE OSCILLOGRAPH CONTROL IS SOLD INDEPENDENTLY OF THE OSCILLOGRAPH, OSCILLOGRAPH AMPLIFIERS, AND ELECTRIC PEN CONTROL IT SHALL PASS ONLY THE TESTS OF SECTION 4 OF THE PROCUREMENT SPECIFICATION PS 1900046.





REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
|---|---|---|---|---|---|
| B | | REPLACES REVISION A WITH CHANGE PER MXC 18687 | — | 9 AUG 63 | MCM |
| C | | CHANGE IN ACCORDANCE WITH MXC 188570 | — | 18 SEP 63 | | 
| D | | CHANGED IN ACCORDANCE WITH MXC 189022 | | 18 SEP 63 | RW |
| E | — | CHANGE IN ACCORDANCE WITH MXC 191986 PER TORR 08189 | — | 12 NOV 63 | LEL |
| F | | REVISED PER TDRR 10206 | | 30 JAN 64 | |
| G | | CHANGED IN ACCORDANCE WITH CM-304038 TORR 14894 | — | 27 OCT 64 | PHG |
| H | | REPLACED WITH CHANGE BY REV J PER TDRR 18662 | — | 4 MAY 65 | J J J |

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. ______ DATE 9-5-63

(H) REPLACED WITH CHANGE BY REV J

(B) REPLACES REV(A) WITH CHANGE

SEE NOTE 8

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | X | | 2 | PS-1900046 | PROCUREMENT SPECIFICATION |
| | | | 1 | | 1 | | CONTROL OSCILLOGRAPH (MODEL NO. CU-3/51) |
| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| QUANTITY REQUIRED | | | | | LIST OF PARTS AND MATERIALS | | |

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900046-011 | 1900000 | -011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

| FRACTIONS | DECIMALS | ANGLES |
|---|---|---|
| + — | ±.005 | + — |
| — — | ±.02 | — — |

DO NOT SCALE THIS DRAWING

MATERIAL —

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN FRIEDE DATE 9 APR 63
CHECKED MALIKOWSKI 23 APR 63
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

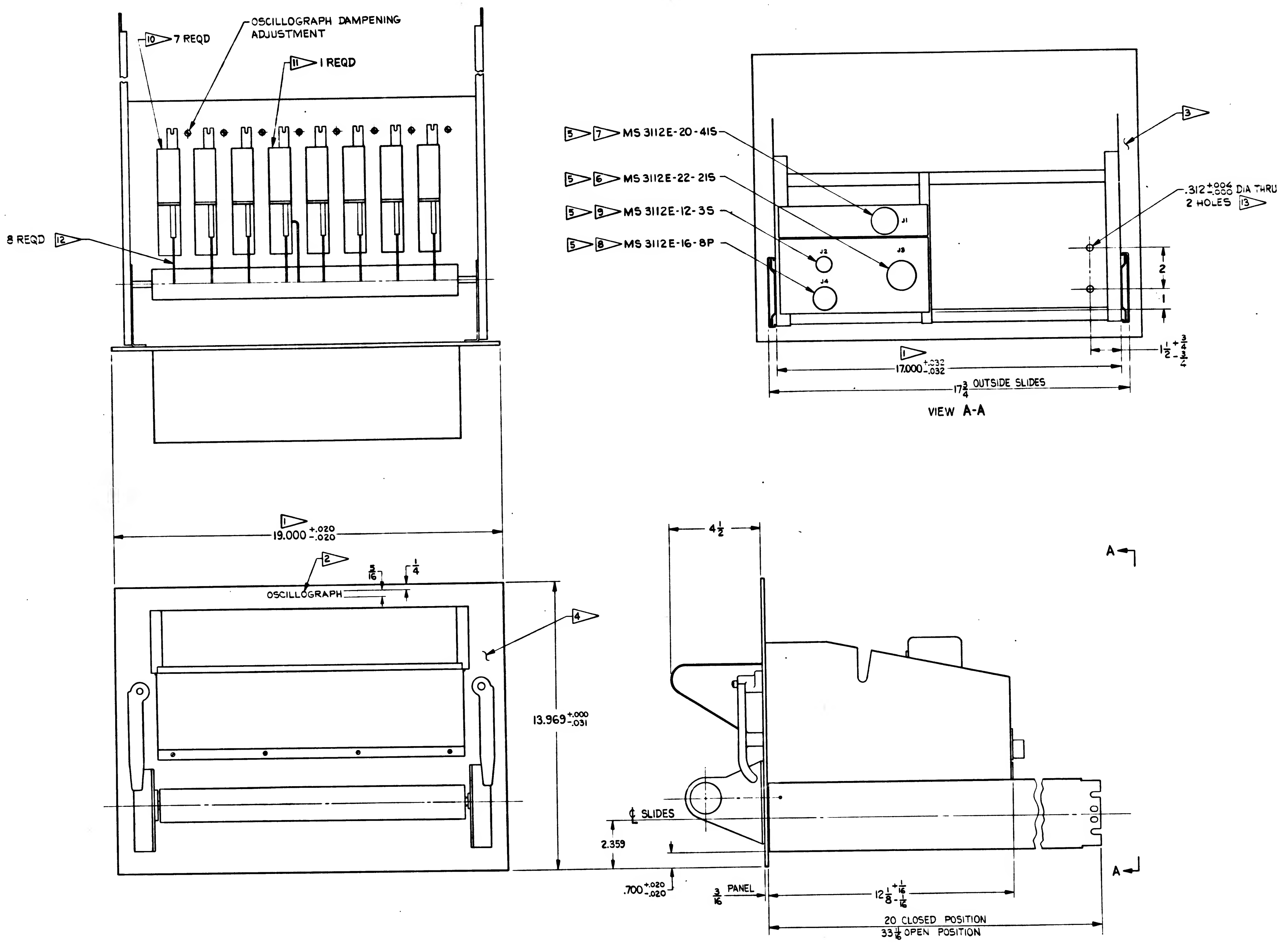
CONTROL
OSCILLOGRAPH

CODE IDENT NO | SIZE E | 1900072

SCALE 1:1 | SHEET 1 OF 1

1900072 H

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| A | | ADDED TEXT IN LIST OF MATERIAL | | MAY 63 | |



FOR INFORMATION ONLY

CLASS B RELEASE TDR No. C1209 DATE 6 May 63

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | 1 | TBA | OSCILLOGRAPH |
| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| QUANTITY REQUIRED | | | | | LIST OF PARTS AND MATERIALS | | |

| | | |
|---|---|---|
| 1900047-011 | 1900004 | 011 |
| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
| APPLICATION | | |

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

| FRACTIONS | DECIMALS | ANGLES |
|---|---|---|
| + 1/64 | +.005 | + — |
| − 1/64 | −.005 | − — |

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN C. Tamsen DATE 11 APR 63
CHECKED 23 APR 63
APPROVAL Apr 23, 1963
APPROVAL 23 APR 63
NASA APPROVAL
Lester Gedman 5/8/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

OSCILLOGRAPH

CODE IDENT NO

SIZE E

1900073

SCALE 1:2

SHEET OF

1900073 A

REQUIREMENTS:

THE RECORDING SYSTEM SHALL BE EIGHT (8) CHANNELS, EACH HAVING A FULL SCALE DEFLECTION OF 40 MM, ± 20 MM FROM CENTER ZERO, WITH RECTILINEAR READOUT USING INK AS A WRITING MEDIUM.

CHART SPEEDS: .5, 1, 2, 5, 10, 20, 50, 100 AND 200 MM PER SEC AND CM PER HR.

THE CHART SHALL BE NOT LESS THAN $14\frac{3}{4}$ INCHES WIDE AND NOT LESS THAN 400 FEET LONG WITH EIGHT CHANNELS, EACH 40 MM WIDE AND GRADUATED IN ONE MM RECTANGULAR CO-ORDINATES.

A PAPER TAKE-UP SHALL BE PROVIDED.

A MANUAL EVENT MARKER OPERATED BY A PUSH BUTTON ON CONTROL, OSCILLOGRAPH P/N 1900072 PANEL FOR 60 CYCLE DISPLAY ON CENTER MARGIN OF CHART OR EQUIVALENT SHALL BE PROVIDED.

ZERO STABILITY SHALL BE .4 MM OR LESS FOR 8 HOURS.

GAIN STABILITY SHALL BE .25 MM OR LESS PER HOUR.

A FOOTAGE INDICATOR WHICH CONTINUOUSLY RECORDS THE REMAINING LENGTH OF CHART PAPER SHALL BE PROVIDED.

INPUT POWER: 105 TO 125 VOLTS $60 \pm 5$ CPS, SINGLE PHASE, 550 WATTS

1 ▷ 19 AND 17 INCH DIMENSIONS OF PANEL AND CHASSIS SHALL BE CENTRALIZED WITHIN .020 INCHES AT ASSEMBLY.
SIDES OF CHASSIS LOCATED BY 17 INCH DIMENSION SHALL BE PARALLEL WITHIN .031 INCHES AND PERPENDICULAR TO REAR SURFACE OF FRONT PANEL WITHIN .062 INCHES.

2 ▷ CHARACTERS: FUTURA DEMIBOLD. CHARACTER HEIGHT $\frac{1}{8}$ INCH EXCEPT WHERE OTHERWISE SPECIFIED. SILK SCREEN PER ND 1002019 USING ENAMEL SEMI-GLOSS, INSTRUMENT BLACK, COLOR 514 OF ANA 157. (CENTRALIZE AS SHOWN.)

3 ▷ BORDER AREA, WITHIN $\frac{3}{16}$ INCH OF THE PANEL EDGE ON THE REAR SURFACE OF THE FRONT PANEL SHALL BE CO-PLANAR AND FREE OF PROTRUSIONS.

4 ▷ FRONT PANEL FINISH: APPLY FINISH P513 OF SPECIFICATION MIL-F-14072.
PRIME AND FINISH COATS TO BE APPLIED TO FRONT AND EDGES ONLY.
APPLY 2 COATS OF TT-E-529A CLASS B ENAMEL, SEMI-GLOSS, LIGHT GRAY, COLOR 26440 OF FED-STD 595.
NOTE - MIL-P-8585 PRIMER SUPERCEDES MIL-P-6889

5 ▷ EXACT CONNECTOR LOCATION ON REAR OF ASSEMBLY SHALL BE DETERMINED BY SUPPLIER.

6 ▷ PIN LIST FOR CONNECTOR MS3112E-22-21S (J3)

| INTERNAL CONNECTIONS | WIRE DESTINATION J1 (CONTROL) |
|---|---|
| A | OPEN |
| B | B |
| C | C |
| D | D |
| E | E |
| F | F |
| G | G |
| H | H |
| J | J |
| K | K |
| L | L |
| M | M |
| N | N |
| P | P |
| R | R |
| S | S |
| T | T |
| U | OPEN |
| V | OPEN |
| W | OPEN |
| X | OPEN |

7 ▷ PIN LIST FOR CONNECTOR MS 3112E-20-41S (J1)

| INTERNAL CONNECTIONS | | FROM CONNECTOR | |
|---|---|---|---|
| A | | | OPEN |
| B | P801 +SIG. IN | B | A1J2 (AMPLIFIER #1) |
| C | P801 -SIG. IN | C | A1J2 (AMPLIFIER #1) |
| D | P801 FEEDBACK | D | A1J2 (AMPLIFIER #1) |
| E | | | OPEN |
| F | | | |
| G | | | |
| H | | | |
| J | | | |
| K | | | |
| L | | | |
| M | | | |
| N | | | |
| O | | | |
| P | | | |
| R | | | |
| S | | | |
| T | | | |
| U | | | |
| V | | | |
| W | | | OPEN |
| X | P802 +SIG. IN | B | A2J2 (AMPLIFIER #1) |
| Y | P802 -SIG. IN | C | A2J2 |
| Z | P802 FEEDBACK | D | A2J2 |
| a | P803 +SIG. IN | B | A3J2 |
| b | P803 -SIG. IN | C | A3J2 |
| c | P803 FEEDBACK | D | A3J2 (AMPLIFIER #1) |
| d | P808 +SIG. IN | B | A4J2 (AMPLIFIER #2) |
| e | P808 -SIG. IN | C | A4J2 |
| f | P808 FEEDBACK | D | A4J2 |
| g | P807 +SIG. IN | B | A3J2 |
| h | P807 -SIG. IN | C | A3J2 |
| i | P807 FEEDBACK | D | A3J2 |
| j | P805 +SIG. IN | B | A1J2 |
| k | P805 -SIG. IN | C | A1J2 (AMPLIFIER #2) |
| m | P804 +SIG. IN | B | A4J2 (AMPLIFIER #1) |
| n | P804 -SIG. IN | C | A4J2 (AMPLIFIER #1) |
| p | P804 FEEDBACK | D | A4J2 (AMPLIFIER #1) |
| q | P806 +SIG. IN | B | A2J2 (AMPLIFIER #2) |
| r | P806 -SIG. IN | C | A2J2 |
| s | P806 FEEDBACK | D | A2J2 |
| t | P805 FEEDBACK | D | A1J2 (AMPLIFIER #2) |

8 ▷ PIN LIST FOR CONNECTOR MS 3112E-16-8P (J4)

| PIN LETTER | CONNECTION |
|---|---|
| A | CHASSIS GROUND |
| B | OPEN |
| C | OPEN |
| D | 115V 60 CPS (HI) |
| E | 115V 60 CPS (LO) |
| F | OPEN |
| G | OPEN |
| H | OPEN |

9 ▷ PIN LIST FOR CONNECTOR MS 3112E-12-3S (J2)

| PIN LETTER | CONNECTION |
|---|---|
| A | 115V 60 CPS (HI) |
| B | 115V 60 CPS (LO) |
| C | OPEN |

THE SUPPLIERS NAME, ADDRESS AND PART NUMBER SHALL BE PLACED ON THE OUTSIDE SURFACE OF THE REAR PLATE. THIS INFORMATION SHALL NOT APPEAR ON THE FRONT PANEL.
THE EQUIPMENT SHALL BE DESIGNED TO MEET THE ENVIRONMENTAL REQUIREMENTS OF ND

THE OSCILLOGRAPH AMPLIFIERS (2 EACH) P/N 1900070, OSCILLOGRAPH CONTROL P/N 1900072 AND OSCILLOGRAPH P/N 1900073 SHALL BE MATED AND THE FOUR DRAWERS TESTED AS ONE UNIT. THE UNIT SHALL PASS ALL THE TESTS CALLED OUT IN ND-

THE REAR SURFACE OF THE FRONT PANEL SHALL BE PROTECTED FROM CORROSION WITH A CADMIUM CONDUCTIVE FINISH PER QQ-P-416.

AUXILIARY ITEMS TO BE SUPPLIED AS PART OF THIS ASSEMBLY:

| | |
|---|---|
| 16 | DISPOSABLE INK CARTRIDGES, COLOR RED PER MODEL A-14040-501 |
| 9 | INK-WRITING STYLI FOR USE WITH THE OSCILLOGRAPH (OS-600) 4 CM PEAK-TO-PEAK DEFLECTION MODEL 20756. |
| 2 | ROLLS OF INK CHART PAPER, 400 FEET, 4 CM SCALE GRADUATED IN MM DIVISIONS NO. 841K SPECTOGRAPH GRAY. |
| 1 | AMPLIFIER PATCH CHORD CB-200. |
| 1 | FEOLA INK PUMP MODEL A-6132-1 OR EQUIVALENT |

10 ▷ 11 ▷ REQUIREMENTS FOR OS-600D AND OS-610D PEN MOTORS
THE PEN MOTORS SHALL HAVE A MINIMUM FREQUENCY RESPONSE, 0 TO 45 CPS WITHIN 3 DB FOR 40 MM PEAK-TO-PEAK DEFLECTION AND 45 TO 120 CPS WITHIN 3 DB FOR 10 MM PEAK-TO-PEAK DEFLECTION.
STEP RESPONSE 90% IN 5 MILLISECONDS OR LESS, WITH LESS THAN 4% OVERSHOOT.
THE DEVIATION FROM LINEARITY SHALL BE LESS THAN .4 MM OVER THE 40 MM SCALE.
CURRENT SENSITIVITY: 28 MA PER MM
COIL RESISTANCE: 16 OHMS (DC)
EACH PEN MOTOR SHALL HAVE INDIVIDUAL ADJUSTMENTS FOR ALIGNMENT OF BOTH LATERAL AND LONGITUDINAL POSITION, AND INDIVIDUAL DAMPING POTENTIOMETERS WITH A RANGE OF 60% TO 110% OF CRITICAL DAMPING.
PEN MOTOR HYSTERESIS SHALL BE LESS THAN ONE QUARTER MM.
THE UNIT SHALL BE COMPATIBLE WITH DRIVER AMPLIFIER DA 101A (MODIFIED), DC PREAMP PR 200 (MODIFIED) AND DEMODULATOR PR 500 (MODIFIED).
NATURAL FREQUENCY: 45 CPS
THE EQUIPMENT SHALL BE DESIGNED TO MEET THE ENVIRONMENTAL REQUIREMENTS OF ND

11 ▷ OS-610D PEN MOTOR ONLY
AN EVENT MARKER SHALL BE PROVIDED WHICH WILL AUTOMATICALLY PULSE EVERY SECOND WHEN THE MM PER SEC CHART SPEEDS ARE ENGAGED

12 ▷ PEN 20756 SAPPHIRE TIP, STANDARD FOR INK WRITING (4 CM DEFLECTION).

13 ▷ ALLOW $\frac{1}{2}$ INCH CLEARANCE BEHIND HOLES.

LATCHING MECHANISM INCLUDED AS PART OF FRONT PANEL HANDLES SHALL BE CAPABLE OF SECURING OSCILLOGRAPH TO CONSOLE WITH A $\frac{3}{16}$ INCH R.F.I. GASKET (COMPRESSES TO $\frac{1}{8}$ INCH) BETWEEN CONSOLE AND BACK OF FRONT PANEL.
CHARACTERS IN AREAS OTHER THAN THOSE ON FRONT PANEL SHALL BE $\frac{1}{8}{}^{+\frac{1}{16}}_{-0}$, LEGIBLY APPLIED BY ANY METHOD.
INNER MEMBER OF CHASSIS TRACK SLIDE SHALL BE OF THE NON-TILTING TYPE.

DATA SOURCE:
MASSA DIVISION
HINGHAM, MASS
MODEL (OS-600D)
MODEL (OS-610D)

**FOR INFORMATION ONLY**
CLASS B RELEASE TDR No. C1209 DATE 8 May 63

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| | | | | | |

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900047-011 | 1900004 | |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

| FRACTIONS | DECIMALS | ANGLES |
|---|---|---|
| $+\frac{1}{64}$ | +.005 | + – |
| $-\frac{1}{64}$ | –.005 | – – |

DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 11 APR 63
CHECKED 23 APR 63
APPROVAL
APPROVAL 23 APR 63
NASA APPROVAL 5/4/63
5/4/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

OSCILLOGRAPH

CODE IDENT NO
SIZE E
1900073
SCALE 1:2
SHEET 2 OF 2

1900073

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REQUIREMENTS:

THE RECORDING SYSTEM SHALL BE EIGHT (8) CHANNELS, EACH HAVING A FULL SCALE DEFLECTION OF 40 MM, ±20 MM FROM CENTER ZERO, WITH RECTILINEAR READOUT USING INK AS A WRITING MEDIUM AND ELECTRIC WRITING AS AN ALTERNATE MEDIUM.

CHART SPEEDS: .5, 1, 2, 5, 10, 20, 50, 100 AND 200 MM PER SEC AND CM PER HR.

THE CHART FOR INK WRITING SHALL BE NOT LESS THAN 14$\frac{3}{4}$ INCHES WIDE AND NOT LESS THAN 400 FEET LONG WITH EIGHT CHANNELS, EACH 40 MM WIDE AND GRADUATED IN ONE MM RECTANGULAR CO-ORDINATES. THE CHART FOR ELECTRIC WRITING SHALL BE THE SAME EXCEPT THE LENGTH SHALL NOT BE LESS THAN 250 FEET LONG.

A PAPER TAKE-UP SHALL BE PROVIDED.

A MANUAL EVENT MARKER OPERATED BY A PUSH BUTTON ON CONTROL, OSCILLOGRAPH P/N 1900072 PANEL FOR 60 CYCLE DISPLAY ON CENTER MARGIN OF CHART OR EQUIVALENT SHALL BE PROVIDED.

ZERO STABILITY SHALL BE .4 MM OR LESS FOR 8 HOURS.

GAIN STABILITY SHALL BE .25 MM OR LESS PER HOUR.

A FOOTAGE INDICATOR WHICH CONTINUOUSLY RECORDS THE REMAINING LENGTH OF CHART PAPER SHALL BE PROVIDED.

INPUT POWER: 105 TO 125 VOLTS 60±5 CPS, SINGLE PHASE, 550 WATTS

1 ▷ 19 AND 17 INCH DIMENSIONS OF PANEL AND CHASSIS SHALL BE CENTRALIZED WITHIN .020 INCHES AT ASSEMBLY.
SIDES OF CHASSIS LOCATED BY 17 INCH DIMENSION SHALL BE PARALLEL WITHIN .031 INCHES AND PERPENDICULAR TO REAR SURFACE OF FRONT PANEL WITHIN .062 INCHES.

2 ▷ CHARACTERS: FUTURA DEMIBOLD. CHARACTER HEIGHT $\frac{1}{8}$ INCH EXCEPT WHERE OTHERWISE SPECIFIED. SILK SCREEN PER ND 1002019 USING ENAMEL SEMI-GLOSS, INSTRUMENT BLACK, COLOR 514 OF ANA 157. (CENTRALIZE AS SHOWN.)

3 ▷ BORDER AREA, WITHIN $\frac{3}{16}$ INCH OF THE PANEL EDGE ON THE REAR SURFACE OF THE FRONT PANEL SHALL BE CO-PLANAR AND FREE OF PROTRUSIONS.

4 ▷ FRONT PANEL FINISH: APPLY FINISH P513 OF SPECIFICATION MIL-F-14072. PRIME AND FINISH COATS TO BE APPLIED TO FRONT AND EDGES ONLY. APPLY 2 COATS OF TT-E-529A CLASS B ENAMEL, SEMI-GLOSS, LIGHT GRAY, COLOR 26440 OF FED-STD 595.
NOTE - MIL-P-8585 PRIMER SUPERCEDES MIL-P-6889

5 ▷ EXACT CONNECTOR LOCATION ON REAR OF ASSEMBLY SHALL BE DETERMINED BY SUPPLIER.

6 ▷ PIN LIST FOR CONNECTOR MS 3112E-22-21S (J3)

| INTERNAL CONNECTIONS | WIRE DESTINATION J1 (CONTROL, 1900072) |
|---|---|
| A | OPEN |
| B | B |
| C | C |
| D | D |
| E | E |
| F | F |
| G | G |
| H | H |
| J | J |
| K | K |
| L | L |
| M | M |
| N | N |
| P | P |
| R | R |
| S | S |
| T | T |
| U | U |
| V | OPEN |
| W | OPEN |
| X | OPEN |

7 ▷ PIN LIST FOR CONNECTOR MS 3112E-20-41S (J1)

| INTERNAL CONNECTIONS | | WIRE DESTINATION FROM CONNECTOR | |
|---|---|---|---|
| A | | | OPEN |
| B | P801 +SIG. IN | B | A1J2 (AMPLIFIER 1900070) |
| C | P801 -SIG. IN | C | A1J2 (AMPLIFIER 1900070) |
| D | P801 FEEDBACK | D | A1J2 (AMPLIFIER 1900070) |
| E | | | OPEN |
| F | | | |
| G | | | |
| H | | | |
| J | | | |
| K | | | |
| L | | | |
| M | | | |
| N | | | |
| O | | | |
| P | | | |
| R | | | |
| S | | | |
| T | | | |
| U | | | |
| V | | | |
| W | | | OPEN |
| X | P802 +SIG. IN | B | A2J2 (AMPLIFIER 1900070) |
| Y | P802 - SIG. IN | C | A2J2 |
| Z | P802 FEEDBACK | D | A2J2 |
| a | P803 +SIG. IN | B | A3J2 |
| b | P803 -SIG. IN | C | A3J2 |
| c | P803 FEEDBACK | D | A3J2 1900070) |
| d | P808 +SIG. IN | B | A1J2 1900071) |
| e | P808 - SIG. IN | C | A1J2 |
| f | P808 FEEDBACK | D | A1J2 |
| g | P807 +SIG. IN | B | A2J2 |
| h | P807 -SIG. IN | C | A2J2 |
| i | P807 FEEDBACK | D | A2J2 |
| j | P805 +SIG. IN | B | A4J2 |
| k | P805 - SIG. IN | C | A4J2 1900071) |
| m | P804 +SIG. IN | B | A4J2 1900070) |
| n | P804 -SIG. IN | C | A4J2 1900070) |
| p | P804 FEEDBACK | D | A4J2 1900070) |
| q | P806 +SIG. IN | B | A3J2 1900071) |
| r | P806 - SIG. IN | C | A3J2 |
| s | P806 FEEDBACK | D | A3J2 |
| t | P805 FEEDBACK | D | A4J2 (AMPLIFIER 1900071) |

8 ▷ PIN LIST FOR CONNECTOR MS 3112E-16-8P (J4)

| PIN LETTER | CONNECTION |
|---|---|
| A | CHASSIS GROUND |
| B | OPEN |
| C | OPEN |
| D | 115V 60 CPS (HI) |
| E | 115V 60 CPS (LO) |
| F | OPEN |
| G | OPEN |
| H | OPEN |

THE SUPPLIERS NAME, ADDRESS AND PART NUMBER SHALL BE PLACED ON THE OUTSIDE SURFACE OF THE REAR PLATE. THIS INFORMATION SHALL NOT APPEAR ON THE FRONT PANEL.

THE OSCILLOGRAPH AMPLIFIER P/N 1900070, OSCILLOGRAPH AMPLIFIER P/N 1900071, OSCILLOGRAPH CONTROL P/N 1900072, OSCILLOGRAPH P/N 1900073 AND PEN CONTROL ELECTRIC OSCILLOGPAPH P/N 1900165 SHALL BE ELECTRICALLY COMPATIBLE WITH EACH OTHER. THEN SHALL BE MATED AND THE FIVE DRAWERS TESTED AS ONE UNIT. THE UNIT SHALL PASS ALL THE TESTS CALLED OUT IN ND-1002205.

AUXILIARY ITEMS (IDENTIFIED BY MASSA PART NUMBER) TO BE SUPPLIED AS PART OF THIS ASSEMBLY:
- 1 DISPOSABLE INK CARTRIDGE, COLOR RED PER MODEL A-14040-501
- 1 INK-WRITING STYLI FOR USE WITH THE OSCILLOGRAPH (OS-600) 4 CM PEAK-TO-PEAK DEFLECTION MODEL 20756.
- 2 ROLLS OF INK CHART PAPER, 400 FEET, 4 CM SCALE GRADUATED IN MM DIVISIONS NO. 841 K SPECTOGRAPH GRAY.
- 1 AMPLIFIER PATCH CHORD CB-200.
- 1 FEOLA INK PUMP MODEL A-6132-1 OR EQUIVALENT
- 9 ELECTRIC STYLI (MODEL 20758)
- 2 ROLLS OF ELECTRIC CHART PAPER 250 FEET, 4 CM SCALE GRADUATED IN MM DIVISIONS NO. 842 E RED.

10 ▷ REQUIREMENTS FOR (MASSA P/N OS-600D) AND (MASSA P/N OS-610D) PEN MOTORS
THE PEN MOTORS SHALL HAVE A MINIMUM FREQUENCY RESPONSE, 0 TO 45 CPS WITHIN 3 DB FOR 40 MM PEAK-TO-PEAK DEFLECTION AND 45 TO 120 CPS WITHIN 3 DB FOR 10 MM PEAK-TO-PEAK DEFLECTION.
STEP RESPONSE 90% IN 5 MILLISECONDS OR LESS, WITH LESS THAN 4% OVERSHOOT.
THE DEVIATION FROM LINEARITY SHALL BE LESS THAN .4 MM OVER THE 40 MM SCALE.
CURRENT SENSITIVITY: 28 MA PER MM
COIL RESISTANCE: 16 OHMS (DC)
EACH PEN MOTOR SHALL HAVE INDIVIDUAL ADJUSTMENTS FOR ALIGNMENT OF BOTH LATERAL AND LONGITUDINAL POSITION, AND INDIVIDUAL DAMPING POTENTIOMETERS WITH A RANGE OF 60% TO 110% OF CRITICAL DAMPING.
PEN MOTOR HYSTERESIS SHALL BE LESS THAN ONE QUARTER MM.
THE UNIT SHALL BE COMPATIBLE WITH DRIVER AMPLIFIER P/N 1900069, DC PREAMP P/N 1900074 AND PHASE SENSITIVE DEMODULATOR P/N 1900068.
NATURAL FREQUENCY: 45 CPS

11 ▷ OS-610D PEN MOTOR ONLY
AN EVENT MARKER SHALL BE PROVIDED WHICH WILL AUTOMATICALLY PULSE EVERY SECOND WHEN THE MM PER SEC CHART SPEEDS ARE ENGAGED

12 ▷ PEN 20756 SAPPHIRE TIP, STANDARD FOR INK WRITING (4 CM DEFLECTION).

13 ▷ ALLOW $\frac{1}{2}$ INCH CLEARANCE BEHIND HOLES.

LATCHING MECHANISM INCLUDED AS PART OF FRONT PANEL HANDLES SHALL BE CAPABLE OF SECURING OSCILLOGRAPH TO CONSOLE WITH A $\frac{3}{16}$ INCH R.F.I. GASKET (COMPRESSES TO $\frac{1}{8}$ INCH) BETWEEN CONSOLE AND BACK OF FRONT PANEL.
CHARACTERS IN AREAS OTHER THAN THOSE ON FRONT PANEL SHALL BE $\frac{1}{8}{}^{+\frac{1}{16}}_{-0}$, LEGIBLY APPLIED PER ND 1002019.
INNER MEMBER OF CHASSIS TRACK SLIDE SHALL BE OF THE NON-TILTING TYPE.

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70323.

FRONT PANEL MATERIAL: ALUMINUM ALLOY 2024-T3 (QQ-A-355 TEMPER T-3) FINISH ON FRONT BEFORE PAINTING (AS ROLLED).

DATA SOURCE:
MASSA DIVISION
HINGHAM, MASS
CD1200A (MODIFIED)

9 ▷ PIN LIST FOR CONNECTOR MS 3112E-12-3S (J2)

| INTERNAL CONNECTIONS PIN LETTER | | DESTINATION (J4 OSCILLOGRAPH AMP 1900070) PIN LETTERS |
|---|---|---|
| A | OPEN | A |
| B | 115V 60 CPS LO | B |
| C | 115V 60 CPS HI | C |
| | | D |
| | | E |
| | | F |

14 ▷ PIN LIST FOR CONNECTOR MS 3112E-14-19P (J5)

| INTERNAL CONNECTIONS J5 | WIRE DESTINATION — (PEN CONTROL ELECTRIC OSCILLOGRAPH P/N 1900165) J2 |
|---|---|
| A OPEN | |
| B | B |
| C | C |
| D | D |
| E | E |
| F — OPEN | |
| G | |
| H | |
| J — OPEN | |
| K | K |
| L | L |
| M | M |
| N | N |
| P | P |
| R — OPEN | |
| S | |
| T — OPEN | |
| U | U |
| V | V |

15 ▷ PIN LIST FOR CONNECTOR MS 3112E-8-4S (J6)

| INTERNAL CONNECTIONS J6 | WIRE DESTINATION — (PEN CONTROL ELECTRIC OSCILLOGRAPH P/N 1900165) J1 |
|---|---|
| A OPEN | |
| B | B 115V 60~ HI |
| C | C 115V 60~ LO |
| D — OPEN | |

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01209 DATE 8 May 63

REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
|---|---|---|---|---|---|
| A | | ADDED ITEM 1 IN LIST OF MATERIAL PER MXC 186915 | | 7 MAY 63 | WK |
| A1 | | CHANGE IN ACCORDANCE WITH MXC 186870 | | 20 JUN 63 | |
| B1 | | CHANGE IN ACCORDANCE WITH MXC 187895 | — | 15 JUL 63 | WM |
| C | | CHANGE IN ACCORDANCE WITH MXC 188535 | | 15 AUG 63 | C.A.M. |
| D | | CHANGE IN ACCORDANCE WITH MXC 188871 | | 26 AUG 63 | C.A.M. |
| E | | CHANGE IN ACCORDANCE WITH MXC 189023 | | 30 AUG 63 | JHH |

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900047-011 | 1900000 | |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

| FRACTIONS | DECIMALS | ANGLES |
|---|---|---|
| $+\frac{1}{64}$ | +.005 | +— |
| $-\frac{1}{64}$ | -.005 | -— |

DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Tamahn DATE 11 APR 63
CHECKED 23 APR 63
APPROVAL Apr 23, 1963
APPROVAL 23 APR 63
NASA APPROVAL 5/8/63
Lester Gedeman 5/8/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

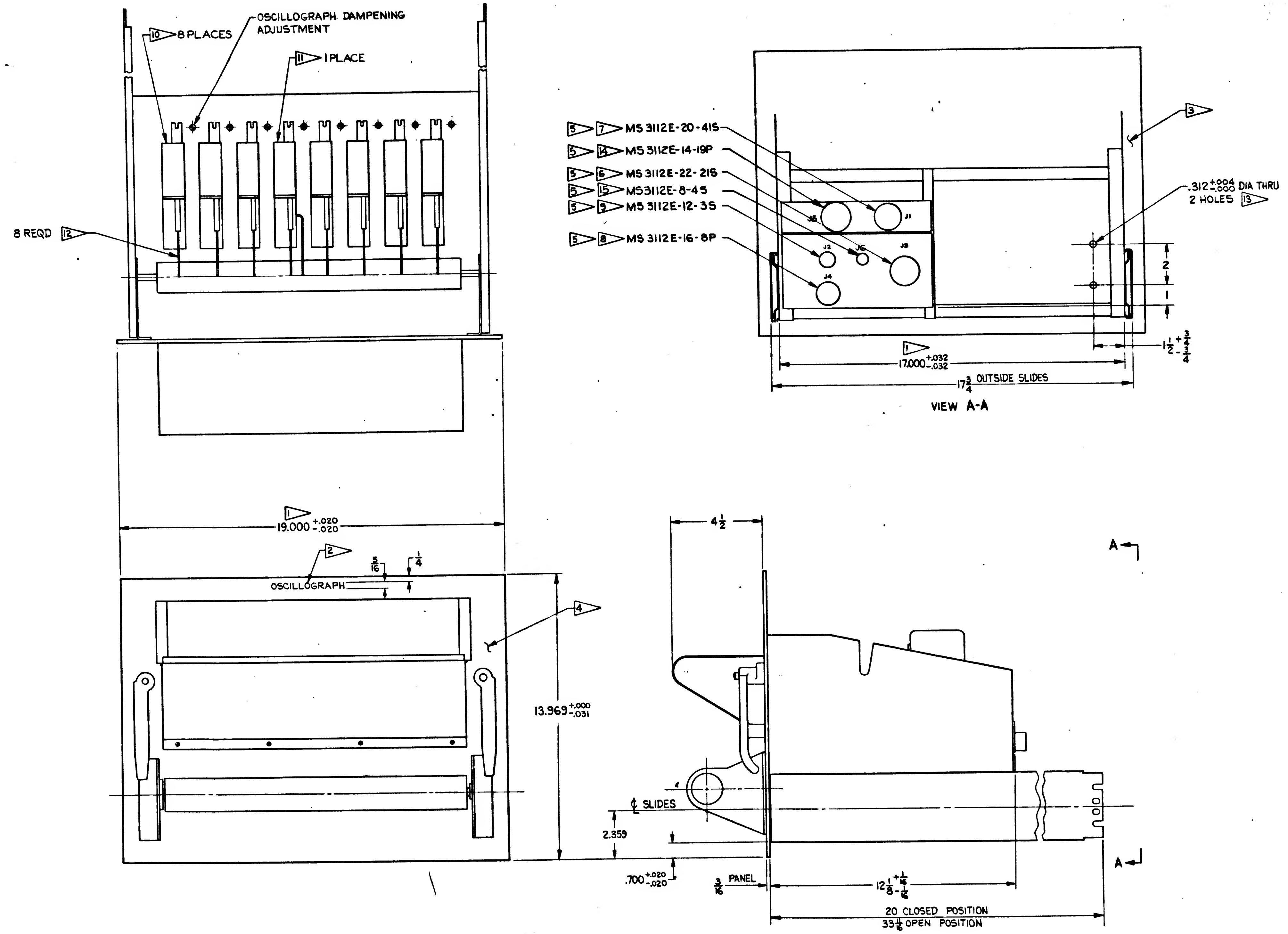
OSCILLOGRAPH

CODE IDENT NO.
SIZE E
1900073
SCALE 1:2
SHEET 2 OF 2

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

## REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD |
|---|---|---|---|---|---|
| A | | ADDED ITEM 1 IN LIST OF MATERIAL PER MXC 186915 | | MAY 63 | WK |
| A1 | | CHANGE IN ACCORDANCE WITH MXC 186870 | | 20 JUN 63 | |
| B1 | | CHANGE IN ACCORDANCE WITH MXC 187895 | — | 15 JUL 63 | |
| C | | CHANGE IN ACCORDANCE WITH MXC 188535 | | 5 AUG 63 | CAM DLF |
| D | | REVISION STATUS CHANGE PER MXC 188571 | | 26 AUG 63 | C.A.M. DLF |
| E | | CHANGE IN ACCORDANCE WITH MXC 189023 | | 30 AUG 63 | JHH |



**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. C1209 DATE 8/14/63

| E | E |
|---|---|
| D | D |
| C | C |
| B | B |
| A1 | A1 |
| SHEET 1 | SHEET 2 |

REVISION STATUS OF SHEETS

## LIST OF PARTS AND MATERIALS

| QUANTITY REQUIRED 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|
| | | 1 | TBA | OSCILLOGRAPH 1/120 [illegible] |

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900047-011 | 1900000 | 011 |

APPLICATION

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UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

| FRACTIONS | DECIMALS | ANGLES |
|---|---|---|
| + 1/64 | +.005 | + — |
| − 1/64 | −.005 | − — |

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

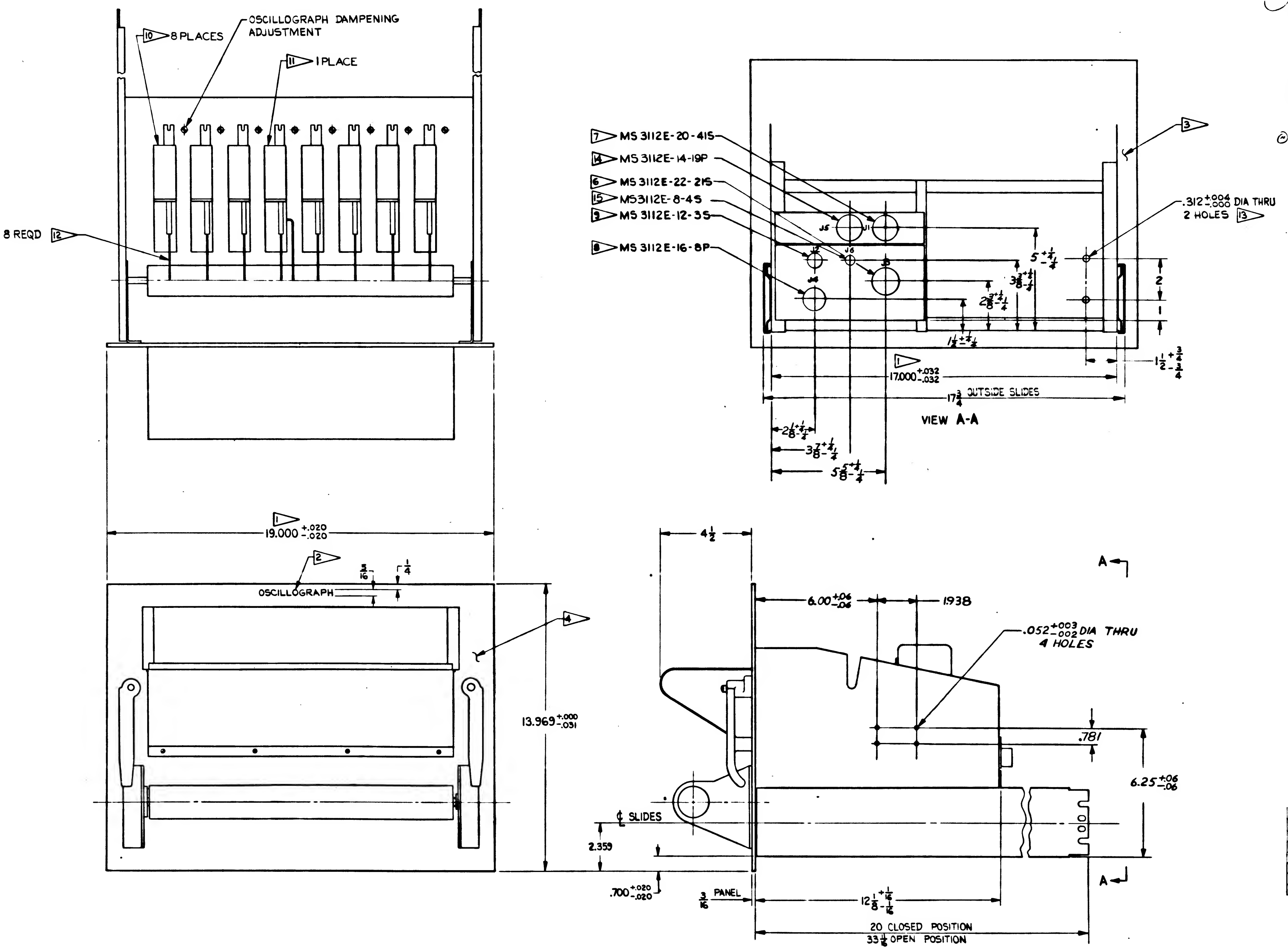
DRAWN R. Tamsen DATE 11 APR 63
CHECKED 23 APR 63
APPROVAL R Rahn Apr 23, 1963
APPROVAL 23 APR 63
NASA APPROVAL
Lester Goodman 5/8/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

# OSCILLOGRAPH

CODE IDENT NO.
SIZE E
1900073
SCALE 1:2
SHEET 1 OF 2

1900073 E



| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| A | | ADDED ITEM 1 IN LIST OF MATERIAL PER MXC 186915 | | 7 MAY 63 | W C |
| A1 | | CHANGE IN ACCORDANCE WITH MXC 186870 | | 20 JUN 63 | |
| B1 | | CHANGE IN ACCORDANCE WITH MXC 27895 | — | 15 JUL 63 | |
| C | | CHANGE IN ACCORDANCE WITH MXC 188535 | | 15 AUG 63 | C.A.M. DLF |
| D | | REVISION STATUS CHANGE PER MXC 188571 | | 26 AUG 63 | C.A.M. DLF |
| E | | CHANGE IN ACCORDANCE WITH MXC 189023 | | 30 AUG 63 | JHH |
| F2 | D-4<br>G-4 | ADDED (4) .052 HOLES & ASSOC. DIM<br>ADDED ASSOC. DIM. FOR J1 THRU J6 HOLES PER MXC 192078 TDRE 08200 | | 20 NOV 63 | JH JEL |

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 0120 DATE 8 May 6

| | |
|---|---|
| F | F |
| E | E |
| D | D |
| C | C |
| B | B |
| A1 | A1 |
| SHEET 1 | SHEET 2 |

REVISION STATUS OF SHEETS

| QUANTITY REQUIRED | | | | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | ON | | | | |
| | | | | | 1 | TEA | OSCILLOGRAPH (NOS [illegible]) |

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900047-011 | 1900000 | |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

| FRACTIONS | DECIMALS | ANGLES |
|---|---|---|
| + 1/64 | +.005 | +— |
| − 1/64 | −.005 | −— |

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE WISCONSIN
ACSP PN
DRAWN R. Tomasa DATE 11 APR 63
CHECKED 23 APR 63
APPROVAL Apr 23, 1963
APPROVAL 23 Apr 63
NASA APPROVAL
Lester Gediman 5/8/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

OSCILLOGRAPH

CODE IDENT NO
SIZE E
1900073
SCALE 1:2
SHEET 1 OF 2

1900073 F

REQUIREMENTS:

THE RECORDING SYSTEM SHALL BE EIGHT (8) CHANNELS, EACH HAVING A FULL SCALE DEFLECTION OF 40 MM, ±20 MM FROM CENTER ZERO, WITH RECTILINEAR READOUT USING INK AS A WRITING MEDIUM AND ELECTRIC WRITING AS AN ALTERNATE MEDIUM.

CHART SPEEDS: .5, 1, 2, 5, 10, 20, 50, 100 AND 200 MM PER SEC AND CM PER HR.

THE CHART FOR INK WRITING SHALL BE NOT LESS THAN 14 3/4 INCHES WIDE AND NOT LESS THAN 400 FEET LONG WITH EIGHT CHANNELS, EACH 40 MM WIDE AND GRADUATED IN ONE MM RECTANGULAR CO-ORDINATES. THE CHART FOR ELECTRIC WRITING SHALL BE THE SAME EXCEPT THE LENGTH SHALL NOT BE LESS THAN 250 FEET LONG.

A PAPER TAKE-UP SHALL BE PROVIDED.

A MANUAL EVENT MARKER OPERATED BY A PUSH BUTTON ON CONTROL, OSCILLOGRAPH P/N 1900072 PANEL FOR 60 CYCLE DISPLAY ON CENTER MARGIN OF CHART OR EQUIVALENT SHALL BE PROVIDED.

ZERO STABILITY SHALL BE .4 MM OR LESS FOR 8 HOURS.

GAIN STABILITY SHALL BE .25 MM OR LESS PER HOUR.

A FOOTAGE INDICATOR WHICH CONTINUOUSLY RECORDS THE REMAINING LENGTH OF CHART PAPER SHALL BE PROVIDED.

INPUT POWER: 105 TO 125 VOLTS 60±5 CPS, SINGLE PHASE, 550 WATTS

▷1 19 AND 17 INCH DIMENSIONS OF PANEL AND CHASSIS SHALL BE CENTRALIZED WITHIN .020 INCHES AT ASSEMBLY.
SIDES OF CHASSIS LOCATED BY 17 INCH DIMENSION SHALL BE PARALLEL WITHIN .031 INCHES AND PERPENDICULAR TO REAR SURFACE OF FRONT PANEL WITHIN .062 INCHES.

▷2 CHARACTERS: FUTURA DEMIBOLD. CHARACTER HEIGHT 1/8 INCH EXCEPT WHERE OTHERWISE SPECIFIED. SILK SCREEN PER ND 1002019 USING ENAMEL SEMI-GLOSS, INSTRUMENT BLACK, COLOR 514 OF ANA 157. (CENTRALIZE AS SHOWN.)

▷3 BORDER AREA, WITHIN 9/16 INCH OF THE PANEL EDGE ON THE REAR SURFACE OF THE FRONT PANEL SHALL BE CO-PLANAR AND FREE OF PROTRUSIONS.

▷4 FRONT PANEL FINISH: APPLY FINISH P513 OF SPECIFICATION MIL-F-14072. PRIME AND FINISH COATS TO BE APPLIED TO FRONT AND EDGES ONLY. APPLY 2 COATS OF TT-E-529A CLASS B ENAMEL, SEMI-GLOSS, LIGHT GRAY, COLOR 26440 OF FED-STD 595.
NOTE - MIL-P-8585 PRIMER SUPERCEDES MIL-P-6889

▷6 PIN LIST FOR CONNECTOR MS3112E-22-21S (J3)

| INTERNAL CONNECTIONS | WIRE DESTINATION J1 (CONTROL, 1900072) |
|---|---|
| A | OPEN |
| B | B |
| C | C |
| D | D |
| E | E |
| F | F |
| G | G |
| H | H |
| J | J |
| K | K |
| L | L |
| M | M |
| N | N |
| P | P |
| R | R |
| S | S |
| T | T |
| U | U |
| V | OPEN |
| W | OPEN |
| X | OPEN |

▷7 PIN LIST FOR CONNECTOR MS3112E-20-41S (J1)

| INTERNAL CONNECTIONS | | WIRE DESTINATION FROM CONNECTOR | | |
|---|---|---|---|---|
| A | | OPEN | | |
| B | P801 +SIG. IN | B | A1J2 (AMPLIFIER 1900070) | |
| C | P801 -SIG. IN | C | A1J2 (AMPLIFIER 1900070) | |
| D | P801 FEEDBACK | D | A1J2 (AMPLIFIER 1900070) | |
| E | | OPEN | | |
| F | | | | |
| G | | | | |
| H | | | | |
| J | | | | |
| K | | | | |
| L | | | | |
| M | | | | |
| N | | | | |
| O | | | | |
| P | | | | |
| R | | | | |
| S | | | | |
| T | | | | |
| U | | | | |
| V | | | | |
| W | | OPEN | | |
| X | P802 +SIG. IN | B | A2J2 | (AMPLIFIER 1900070) |
| Y | P802 -SIG. IN | C | A2J2 | |
| Z | P802 FEEDBACK | D | A2J2 | |
| a | P803 +SIG. IN | B | A3J2 | |
| b | P803 -SIG. IN | C | A3J2 | |
| c | P803 FEEDBACK | D | A3J2 | 1900070) |
| d | P808 +SIG. IN | B | A1J2 | 1900071) |
| e | P808 -SIG. IN | C | A1J2 | |
| f | P808 FEEDBACK | D | A1J2 | |
| g | P807 +SIG. IN | B | A2J2 | |
| h | P807 -SIG. IN | C | A2J2 | |
| i | P807 FEEDBACK | D | A2J2 | |
| j | P805 +SIG. IN | B | A4J2 | |
| k | P805 -SIG. IN | C | A4J2 | 1900071) |
| m | P804 +SIG. IN | B | A4J2 | 1900070) |
| n | P804 -SIG. IN | C | A4J2 | 1900070) |
| p | P804 FEEDBACK | D | A4J2 | 1900070) |
| q | P806 +SIG. IN | B | A3J2 | 1900071) |
| r | P806 -SIG. IN | C | A3J2 | |
| s | P806 FEEDBACK | D | A3J2 | |
| t | P805 FEEDBACK | D | A4J2 | (AMPLIFIER 1900071) |

▷8 PIN LIST FOR CONNECTOR MS3112E-16-8P (J4)

| PIN LETTER | CONNECTION |
|---|---|
| A | CHASSIS GROUND |
| B | OPEN |
| C | OPEN |
| D | 115V 60CPS (HI) |
| E | 115V 60CPS (LO) |
| F | OPEN |
| G | OPEN |
| H | OPEN |

THE SUPPLIERS NAME, ADDRESS AND PART NUMBER SHALL BE PLACED ON THE OUTSIDE SURFACE OF THE REAR PLATE. THIS INFORMATION SHALL NOT APPEAR ON THE FRONT PANEL.

THE OSCILLOGRAPH AMPLIFIER P/N 1900070, OSCILLOGRAPH AMPLIFIER P/N 1900071, OSCILLOGRAPH CONTROL P/N 1900072, OSCILLOGRAPH P/N 1900073 AND PEN CONTROL ELECTRIC OSCILLOGRAPH P/N 1900165 SHALL BE ELECTRICALLY COMPATIBLE WITH EACH OTHER. THEN SHALL BE MATED AND THE FIVE DRAWERS TESTED AS ONE UNIT. THE UNIT SHALL PASS ALL THE TESTS CALLED OUT IN ND-1002205.

AUXILIARY ITEMS (IDENTIFIED BY MASSA PART NUMBER) TO BE SUPPLIED AS PART OF THIS ASSEMBLY:
1 DISPOSABLE INK CARTRIDGE, COLOR RED PER MODEL A-14040-501
1 INK-WRITING STYLI FOR USE WITH THE OSCILLOGRAPH (OS-600) 4 CM PEAK-TO-PEAK DEFLECTION MODEL 20756.
2 ROLLS OF INK CHART PAPER, 400 FEET, 4 CM SCALE GRADUATED IN MM DIVISIONS NO. 841 K SPECTOGRAPH GRAY.
1 AMPLIFIER PATCH CHORD CB-200.
1 FEOLA INK PUMP MODEL A-6132-1 OR EQUIVALENT
9 ELECTRIC STYLI (MODEL 20758)
2 ROLLS OF ELECTRIC CHART PAPER 250 FEET, 4 CM SCALE GRADUATED IN MM DIVISIONS NO. 842 E RED.

▷10 REQUIREMENTS FOR (MASSA P/N OS-600D) AND (MASSA P/N OS-610D) PEN MOTORS
THE PEN MOTORS SHALL HAVE A MINIMUM FREQUENCY RESPONSE, 0 TO 45 CPS WITHIN 3 DB FOR 40 MM PEAK-TO-PEAK DEFLECTION AND 45 TO 120 CPS WITHIN 3 DB FOR 10 MM PEAK-TO-PEAK DEFLECTION.
STEP RESPONSE 90% IN 5 MILLISECONDS OR LESS, WITH LESS THAN 4% OVERSHOOT.
THE DEVIATION FROM LINEARITY SHALL BE LESS THAN .4 MM OVER THE 40 MM SCALE.
CURRENT SENSITIVITY: 28 MA PER MM
COIL RESISTANCE: 16 OHMS (DC)
EACH PEN MOTOR SHALL HAVE INDIVIDUAL ADJUSTMENTS FOR ALIGNMENT OF BOTH LATERAL AND LONGITUDINAL POSITION, AND INDIVIDUAL DAMPING POTENTIOMETERS WITH A RANGE OF 60% TO 110% OF CRITICAL DAMPING.
PEN MOTOR HYSTERESIS SHALL BE LESS THAN ONE QUARTER MM.
THE UNIT SHALL BE COMPATIBLE WITH DRIVER AMPLIFIER P/N 1900069, DC PREAMP P/N 1900074 AND PHASE SENSITIVE DEMODULATOR P/N 1900068.
NATURAL FREQUENCY: 45 CPS

▷11 OS-610D PEN MOTOR ONLY
AN EVENT MARKER SHALL BE PROVIDED WHICH WILL AUTOMATICALLY PULSE EVERY SECOND WHEN THE MM PER SEC CHART SPEEDS ARE ENGAGED

▷12 PEN 20756 SAPPHIRE TIP, STANDARD FOR INK WRITING (4 CM DEFLECTION).

▷13 ALLOW 1/2 INCH CLEARANCE BEHIND HOLES.

LATCHING MECHANISM INCLUDED AS PART OF FRONT PANEL HANDLES SHALL BE CAPABLE OF SECURING OSCILLOGRAPH TO CONSOLE WITH A 3/16 INCH R.F.I. GASKET (COMPRESSES TO 1/8 INCH) BETWEEN CONSOLE AND BACK OF FRONT PANEL.
CHARACTERS IN AREAS OTHER THAN THOSE ON FRONT PANEL SHALL BE $\frac{1}{8}{}^{+\frac{1}{16}}_{-0}$, LEGIBLY APPLIED PER ND 1002019.
INNER MEMBER OF CHASSIS TRACK SLIDE SHALL BE OF THE NON-TILTING TYPE.

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70323.

FRONT PANEL MATERIAL: ALUMINUM ALLOY 2024-T3 (QQ-A-355 TEMPER T-3) FINISH ON FRONT BEFORE PAINTING (AS ROLLED).

DATA SOURCE:
MASSA DIVISION
HINGHAM, MASS
CD1200A (MODIFIED)

▷9 PIN LIST FOR CONNECTOR MS3112E-12-3S (J2)

| INTERNAL CONNECTIONS PIN LETTER | | DESTINATION (J4 OSCILLOGRAPH AMP 1900070) PIN LETTERS |
|---|---|---|
| A | OPEN | A |
| B | 115V 60 CPS LO | B |
| C | 115V 60 CPS HI | C |
| | | D |
| | | E |
| | | F |

▷14 PIN LIST FOR CONNECTOR MS3112E-14-19P (J5)
WIRE DESTINATION — (PEN CONTROL ELECTRIC OSCILLOGRAPH P/N 1900165)

| INTERNAL CONNECTIONS J5 | J2 |
|---|---|
| A | OPEN |
| B | B |
| C | C |
| D | D |
| E | E |
| F | OPEN |
| G | |
| H | |
| J | OPEN |
| K | K |
| L | L |
| M | M |
| N | N |
| P | P |
| R | OPEN |
| S | |
| T | OPEN |
| U | U |
| V | V |

▷15 PIN LIST FOR CONNECTOR MS3112E-8-4S (J6)
WIRE DESTINATION — (PEN CONTROL ELECTRIC OSCILLOGRAPH P/N 1900165)

| INTERNAL CONNECTIONS J6 | J1 |
|---|---|
| A | OPEN |
| B | B 115V 60~ HI |
| C | C 115V 60~ LO |
| D | OPEN |

**FOR INFORMATION ONLY**
CLASS B RELEASE TDR No. [illegible] DATE 8 May 63

REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APP'D |
|---|---|---|---|---|---|
| A | | ADDED ITEM IN LIST OF MATERIAL PER MXC 186915 | | 9 MAY 63 | WK |
| A1 | | CHANGE IN ACCORDANCE WITH MXC 186870 | | 20 JUN 63 | [illegible] |
| B1 | | CHANGE IN ACCORDANCE WITH MXC 187895 | — | 15 JUL 63 | WM |
| C | | CHANGE IN ACCORDANCE WITH MXC 188535 | | 15 AUG 63 | C.A.M.<br>MSM |
| D | | CHANGE IN ACCORDANCE WITH MXC 188571 | | 26 AUG 63 | C.A.M.<br>DLF |
| E | | CHANGE IN ACCORDANCE WITH MXC 189023 | | 30 AUG 63 | JHH |
| F | E-8 | REM'D ▷ EXACT CONN LOC ON REAR OF ASSY SHALL BE DETERMINED BY SUP. PER MXC 192078 DER TORR 08800 | | 20 NOV 63 | SH<br>JEL |

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900047-011 | 1900000 | |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

| FRACTIONS | DECIMALS | ANGLES |
|---|---|---|
| +1/64 | +.005 | +– |
| –1/64 | –.005 | –– |

DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

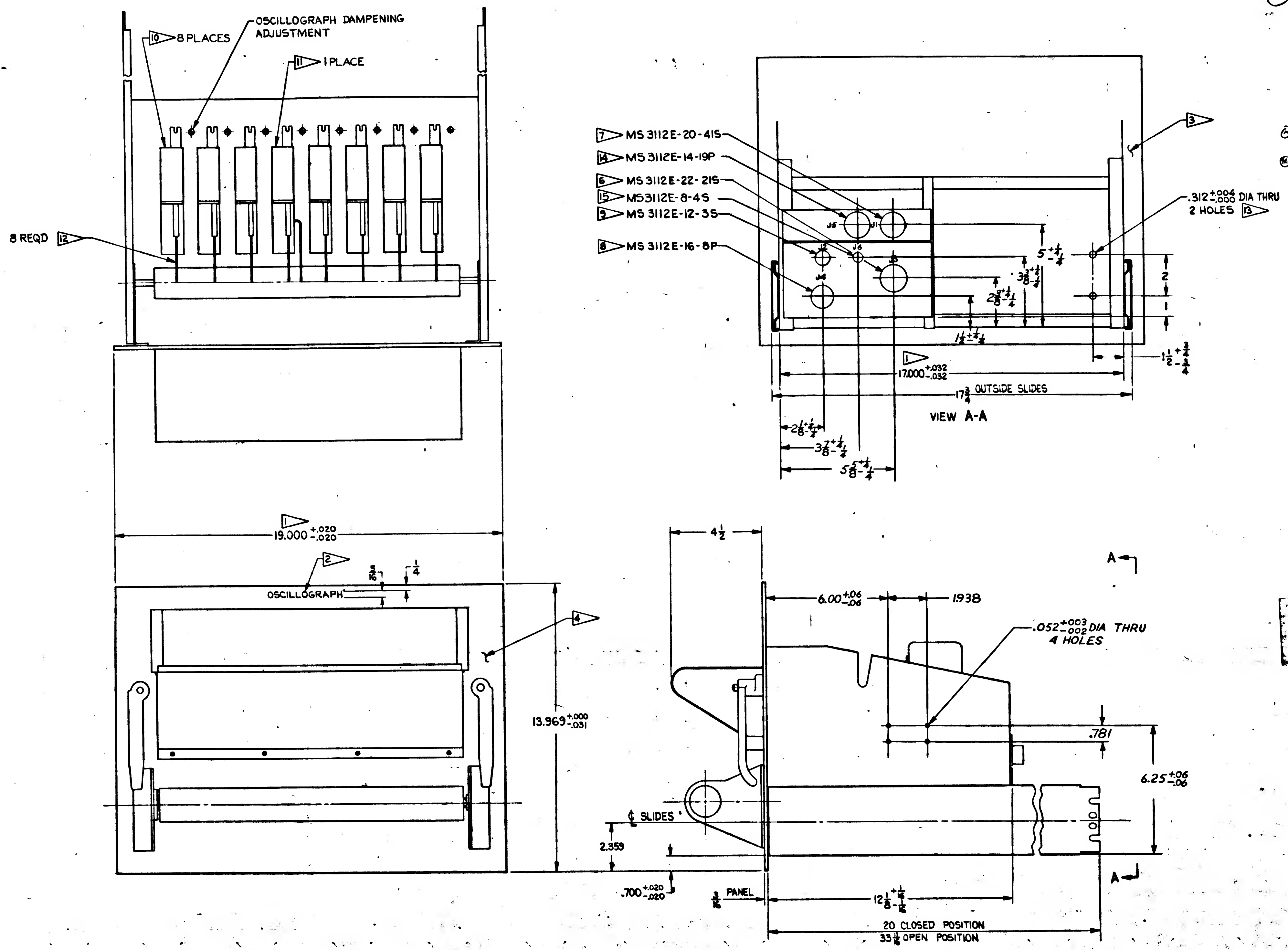
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Tamsen DATE 11 APR 63
CHECKED 23 APR 63
APPROVAL Apr 23, 1963
APPROVAL 23 APR 63
NASA APPROVAL 5/1/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

OSCILLOGRAPH

CODE IDENT NO
SIZE E
1900073
SCALE 1:2
SHEET 2 OF 2

1900073 F



| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
| A | | ADDED ITEM 1 IN LIST OF MATERIAL PER MXC 186915 | | 7 MAY 63 | WK |
| A1 | | CHANGE IN ACCORDANCE WITH MXC 186870 | | 20 JUN 63 | |
| B1 | | CHANGE IN ACCORDANCE WITH MXC 187895 | — | 15 JUL 63 | WM |
| C | | CHANGE IN ACCORDANCE WITH MXC 188535 | | 15 AUG 63 | C.A.M. DLF |
| D | | REVISION STATUS CHANGE PER MXC 188571 | | 26 AUG 63 | C.A.M. DLF |
| E | | CHANGE IN ACCORDANCE WITH MXC 189023 TDAR 03272 | | 30 AUG 63 | JHH |
| F2 | D-4<br>G-4 | ADDED (4) .052 HOLES & ASSOC. DIM. ADDED ASSOC. DIM. FOR J1 THRU J6 HOLES. PER MXC 192078 TDAR 08800 | | 20 NOV 63 | SH JEL |
| G | | REVISED PER TDRR 10205 | | 30 JUN 64 | |

FOR INFORMATION ONLY
CLASS B RELEASE TDR No. 01209 DATE 8/ /63

| | |
|---|---|
| G | G |
| F | F |
| E | E |
| D | D |
| C | C |
| B | B |
| A1 | A1 |
| SHEET 1 | SHEET 2 |

REVISION STATUS OF SHEETS

SEE NOTE 16

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | 1 | | 1 | TBA | OSCILLOGRAPH (MODEL NO. 850A/S1) |
| | | | X | | 2 | PS1900047 | PROCUREMENT SPECIFICATION |
| | | | | | ~~1~~ | ~~TBA~~ | ~~OSCILLOGRAPH (NOS [illegible])~~ |
| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| QUANTITY REQUIRED | | | | | LIST OF PARTS AND MATERIALS | | |

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900047-011 | 1900000 | 011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON

| FRACTIONS | DECIMALS | ANGLES |
|---|---|---|
| + 1/64 | +.005 | + — |
| − 1/64 | −.005 | − — |

DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Tomasw DATE 11 APR 63
CHECKED 23 APR 63
APPROVAL R.R. Apr 23 1963
APPROVAL 23 APR 63
NASA APPROVAL Lester Goodman 5/8/63
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

# OSCILLOGRAPH

CODE IDENT NO.
SIZE E
1900073
SCALE 1:2
SHEET 1 OF 2

REQUIREMENTS:

THE RECORDING SYSTEM SHALL BE EIGHT (8) CHANNELS, EACH HAVING A FULL SCALE DEFLECTION OF 40 MM, ±20 MM FROM CENTER ZERO, WITH RECTILINEAR READOUT USING INK AS A WRITING MEDIUM AND ELECTRIC WRITING AS AN ALTERNATE MEDIUM.

CHART SPEEDS: .5, 1, 2, 5, 10, 20, 50, 100 AND 200 MM PER SEC AND CM PER HR.

THE CHART FOR INK WRITING SHALL BE NOT LESS THAN 14 $\frac{3}{4}$ INCHES WIDE AND NOT LESS THAN 400 FEET LONG WITH EIGHT CHANNELS, EACH 40 MM WIDE AND GRADUATED IN ONE MM RECTANGULAR CO-ORDINATES. THE CHART FOR ELECTRIC WRITING SHALL BE THE SAME EXCEPT THE LENGTH SHALL NOT BE LESS THAN 250 FEET LONG.

A PAPER TAKE-UP SHALL BE PROVIDED.

A MANUAL EVENT MARKER OPERATED BY A PUSH BUTTON ON CONTROL, OSCILLOGRAPH P/N 1900072-011 PANEL FOR 60 CYCLE DISPLAY ON CENTER MARGIN OF CHART OR EQUIVALENT SHALL BE PROVIDED.

ZERO STABILITY SHALL BE .4 MM OR LESS FOR 8 HOURS.

GAIN STABILITY SHALL BE .25 MM OR LESS PER HOUR.

A FOOTAGE INDICATOR WHICH CONTINUOUSLY RECORDS THE REMAINING LENGTH OF CHART PAPER SHALL BE PROVIDED.

INPUT POWER: 105 TO 125 VOLTS 60±5 CPS, SINGLE PHASE, 550 WATTS

1▷ 19 AND 17 INCH DIMENSIONS OF PANEL AND CHASSIS SHALL BE CENTRALIZED WITHIN .020 INCHES AT ASSEMBLY.
SIDES OF CHASSIS LOCATED BY 17 INCH DIMENSION SHALL BE PARALLEL WITHIN .031 INCHES AND PERPENDICULAR TO REAR SURFACE OF FRONT PANEL WITHIN .062 INCHES.

2▷ CHARACTERS: FUTURA DEMIBOLD. CHARACTER HEIGHT $\frac{1}{8}$ INCH EXCEPT WHERE OTHERWISE SPECIFIED. SILK SCREEN PER ND 1002019 USING ENAMEL SEMI-GLOSS, INSTRUMENT BLACK, COLOR 514 OF ANA 157. (CENTRALIZE AS SHOWN.)

3▷ BORDER AREA, WITHIN $\frac{3}{16}$ INCH OF THE PANEL EDGE ON THE REAR SURFACE OF THE FRONT PANEL SHALL BE CO-PLANAR AND FREE OF PROTRUSIONS.

4▷ FRONT PANEL FINISH: APPLY FINISH P513 OF SPECIFICATION MIL-F-14072. PRIME AND FINISH COATS TO BE APPLIED TO FRONT AND EDGES ONLY. APPLY 2 COATS OF TT-E-529A CLASS B ENAMEL, SEMI-GLOSS, LIGHT GRAY, COLOR 26440 OF FED-STD 595.
NOTE-MIL-P-8585 PRIMER SUPERCEDES MIL-P-6889

6▷ PIN LIST FOR CONNECTOR MS 3112E-22-21S (J3)

| INTERNAL CONNECTIONS | WIRE DESTINATION J1 (CONTROL, 1900072) |
|---|---|
| A | OPEN |
| B | B |
| C | C |
| D | D |
| E | E |
| F | F |
| G | G |
| H | H |
| J | J |
| K | K |
| L | L |
| M | M |
| N | N |
| P | P |
| R | R |
| S | S |
| T | T |
| U | U |
| V | OPEN |
| W | OPEN |
| X | OPEN |

7▷ PIN LIST FOR CONNECTOR MS 3112E-20-41S (J1)

| INTERNAL CONNECTIONS | | WIRE DESTINATION FROM CONNECTOR | | |
|---|---|---|---|---|
| A | | | | OPEN |
| B | P801 +SIG. IN | B | A1J2 (AMPLIFIER 1900070) | |
| C | P801 -SIG. IN | C | A1J2 (AMPLIFIER 1900070) | |
| D | P801 FEEDBACK | D | A1J2 (AMPLIFIER 1900070) | |
| E | | | | OPEN |
| F | | | | |
| G | | | | |
| H | | | | |
| J | | | | |
| K | | | | |
| L | | | | |
| M | | | | |
| N | | | | |
| O | | | | |
| P | | | | |
| R | | | | |
| S | | | | |
| T | | | | |
| U | | | | |
| V | | | | |
| W | | | | OPEN |
| X | P802 +SIG. IN | B | A2J2 (AMPLIFIER 1900070) | |
| Y | P802 -SIG. IN | C | A2J2 | |
| Z | P802 FEEDBACK | D | A2J2 | |
| a | P803 +SIG. IN | B | A3J2 | |
| b | P803 -SIG. IN | C | A3J2 | |
| c | P803 FEEDBACK | D | A3J2 | 1900070) |
| d | P808 +SIG. IN | B | A1J2 | 1900071) |
| e | P808 -SIG. IN | C | A1J2 | |
| f | P808 FEEDBACK | D | A1J2 | |
| g | P807 +SIG. IN | B | A2J2 | |
| h | P807 -SIG. IN | C | A2J2 | |
| i | P807 FEEDBACK | D | A2J2 | |
| j | P805 +SIG. IN | B | A4J2 | |
| k | P805 -SIG. IN | C | A4J2 | 1900071) |
| m | P804 +SIG. IN | B | A4J2 | 1900070) |
| n | P804 -SIG. IN | C | A4J2 | 1900070) |
| p | P804 FEEDBACK | D | A4J2 | 1900070) |
| q | P806 +SIG. IN | B | A3J2 | 1900071) |
| r | P806 -SIG. IN | C | A3J2 | |
| s | P806 FEEDBACK | D | A3J2 | |
| t | P805 FEEDBACK | D | A4J2 (AMPLIFIER 1900071) | |

8▷ PIN LIST FOR CONNECTOR MS 3112E-16-8P (J4)

| PIN LETTER | CONNECTION |
|---|---|
| A | CHASSIS GROUND |
| B | OPEN |
| C | OPEN |
| D | 115V 60 CPS (HI) |
| E | 115V 60 CPS (LO) |
| F | OPEN |
| G | OPEN |
| H | OPEN |

THE SUPPLIERS NAME, ADDRESS AND PART NUMBER SHALL BE PLACED ON THE OUTSIDE SURFACE OF THE REAR PLATE. THIS INFORMATION SHALL NOT APPEAR ON THE FRONT PANEL.

THE OSCILLOGRAPH AMPLIFIER P/N 1900070-011, OSCILLOGRAPH AMPLIFIER P/N 1900071-011, OSCILLOGRAPH CONTROL P/N 1900072-011 OSCILLOGRAPH P/N 1900073-011 AND PEN CONTROL ELECTRIC OSCILLOGPAPH P/N 1900165-011 SHALL BE ELECTRICALLY COMPATIBLE WITH EACH OTHER. THEN SHALL BE MATED AND THE FIVE DRAWERS TESTED AS ONE UNIT, EXCEPT AS SPECIFIED IN NOTE 16. THE UNIT SHALL PASS ALL THE TESTS CALLED OUT IN ND-1002205.

AUXILIARY ITEMS (IDENTIFIED BY MASSA PART NUMBER) TO BE SUPPLIED AS PART OF THIS ASSEMBLY:
- 1 DISPOSABLE INK CARTRIDGE, COLOR BLUE PER MODEL A-14040-501
- 1 INK-WRITING STYLI FOR USE WITH THE OSCILLOGRAPH (OS-600) 4 CM PEAK-TO-PEAK DEFLECTION MODEL 20756.
- 2 ROLLS OF INK CHART PAPER, 400 FEET, 4 CM SCALE GRADUATED IN MM DIVISIONS NO. 841 K SPECTOGRAPH GRAY.
- 1 AMPLIFIER PATCH CHORD CB-200.
- 1 FEOLA INK PUMP MODEL A-6132-1 OR EQUIVALENT
- 9 ELECTRIC STYLI (MODEL 20758)
- 2 ROLLS OF ELECTRIC CHART PAPER 250 FEET, 4 CM SCALE GRADUATED IN MM DIVISIONS NO. 842 E RED.

10▷ REQUIREMENTS FOR (MASSA P/N OS-600D) AND (MASSA P/N OS-610D) PEN MOTORS
THE PEN MOTORS SHALL HAVE A MINIMUM FREQUENCY RESPONSE, 0 TO 45 CPS WITHIN 3 DB FOR 40 MM PEAK-TO-PEAK DEFLECTION AND 45 TO 120 CPS WITHIN 3 DB FOR 10 MM PEAK-TO-PEAK DEFLECTION.
STEP RESPONSE 90% IN 5 MILLISECONDS OR LESS, WITH LESS THAN 4% OVERSHOOT.
THE DEVIATION FROM LINEARITY SHALL BE LESS THAN .4 MM OVER THE 40 MM SCALE.
CURRENT SENSITIVITY: 28 MA PER MM
COIL RESISTANCE: 16 OHMS (DC)
EACH PEN MOTOR SHALL HAVE INDIVIDUAL ADJUSTMENTS FOR ALIGNMENT OF BOTH LATERAL AND LONGITUDINAL POSITION, AND INDIVIDUAL DAMPING POTENTIOMETERS WITH A RANGE OF 60% TO 110% OF CRITICAL DAMPING.
PEN MOTOR HYSTERESIS SHALL BE LESS THAN ONE QUARTER MM.
THE UNIT SHALL BE COMPATIBLE WITH DRIVER AMPLIFIER P/N 1900069-011, DC PREAMP P/N 1900074-011 AND PHASE SENSITIVE DEMODULATOR P/N 1900068-011.
NATURAL FREQUENCY: 45 CPS

11▷ OS-610D PEN MOTOR ONLY
AN EVENT MARKER SHALL BE PROVIDED WHICH WILL AUTOMATICALLY PULSE EVERY SECOND WHEN THE MM PER SEC CHART SPEEDS ARE ENGAGED

12▷ PEN 20756 SAPPHIRE TIP, STANDARD FOR INK WRITING (4 CM DEFLECTION).

13▷ ALLOW $\frac{1}{4}$ INCH CLEARANCE BEHIND HOLES.

LATCHING MECHANISM INCLUDED AS PART OF FRONT PANEL HANDLES SHALL BE CAPABLE OF SECURING OSCILLOGRAPH TO CONSOLE WITH A $\frac{3}{16}$ INCH R.F.I. GASKET (COMPRESSES TO $\frac{1}{8}$ INCH) BETWEEN CONSOLE AND BACK OF FRONT PANEL.
CHARACTERS IN AREAS OTHER THAN THOSE ON FRONT PANEL SHALL BE $\frac{1}{8}{}^{+\frac{1}{16}}_{-0}$, LEGIBLY APPLIED PER ND 1002019.
INNER MEMBER OF CHASSIS TRACK SLIDE SHALL BE OF THE NON-TILTING TYPE.

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70323.

FRONT PANEL MATERIAL: ALUMINUM ALLOY 2024-T3 (QQ-A-355 TEMPER T-3) FINISH ON FRONT BEFORE PAINTING (AS ROLLED).

DATA SOURCE:
MASSA DIVISION
HINGHAM, MASS
CD1200A (MODIFIED)

9▷ PIN LIST FOR CONNECTOR MS 3112E-12-3S (J2)

| INTERNAL CONNECTIONS PIN LETTER | | DESTINATION (J4 OSCILLOGRAPH AMP 1900070) PIN LETTERS |
|---|---|---|
| A | OPEN | A |
| B | 115V 60 CPS LO | B |
| C | 115V 60 CPS HI | C |
| | | D |
| | | E |
| | | F |

14▷ PIN LIST FOR CONNECTOR MS 3112E-14-19P (J5)

INTERNAL CONNECTIONS — WIRE DESTINATION — (PEN CONTROL ELECTRIC OSCILLOGRAPH P/N 1900165)

| J5 | | J2 |
|---|---|---|
| A | OPEN | |
| B | | B |
| C | | C |
| D | | D |
| E | | E |
| F | OPEN | |
| G | | |
| H | | |
| J | OPEN | |
| K | | K |
| L | | L |
| M | | M |
| N | | N |
| P | | P |
| R | OPEN | |
| S | | |
| T | OPEN | |
| U | | U |
| V | | V |

FOR INFORMATION ONLY
CLASS B RELEASE TDR No. 01209 DATE 8/14/63

15▷ PIN LIST FOR CONNECTOR MS 3112E-8-4S (J6)

INTERNAL CONNECTIONS — WIRE DESTINATION — (PEN CONTROL ELECTRIC OSCILLOGRAPH P/N 1900165)

| J6 | | J1 |
|---|---|---|
| A | OPEN | |
| B | | B 115V 60~ HI |
| C | | C 115V 60~ LO. |
| D | OPEN | |

16▷ WHEN THE OSCILLOGRAPH IS SOLD INDEPENDENTLY OF OSCILLOGRAPH AMPLIFIERS 1900070-011 AND 1900071-011 AND CONTROL OSCILLOGRAPH 1900072-011, AND ELECTRIC PEN CONTROL 1900165-011, IT SHALL PASS ONLY THE TESTS OF SECTION 4 OF THE PROCUREMENT SPEC PS-1900047.

REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
|---|---|---|---|---|---|
| A | | ADDED ITEM 1 IN LIST OF MATERIAL PER MXC 186915 | | 7 MAY 63 | WK |
| A1 | | CHANGE IN ACCORDANCE WITH MXC 186870 | | 20 JUN 63 | [illegible] |
| B1 | | CHANGE IN ACCORDANCE WITH MXC 187895 | — | 15 JUL 63 | WM |
| C | | CHANGE IN ACCORDANCE WITH MXC 188535 | | 15 AUG 63 | G.A.M. MGM |
| D | | CHANGE IN ACCORDANCE WITH MXC 188571 | | 26 AUG 63 | G.A.M. DLF |
| E | | CHANGE IN ACCORDANCE WITH MXC 189023 TDRR 05713 | | 30 AUG 63 | JHH |
| F | E-8 | REM'D 5▷ EXACT CONN LOC ON REAR OF ASSY SHALL BE DETERMINED BY SUP. PER MXC 192078 TDRR 08800 | | 20 NOV 63 | S H JEL |
| G | | REVISED PER TDRR 10205 | | 30 JUN 64 | |

| | | |
|---|---|---|
| 1900047-011 | 1900000 | |
| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
| APPLICATION | | |

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

| FRACTIONS | DECIMALS | ANGLES |
|---|---|---|
| $+\frac{1}{64}$ | +.005 | +– |
| $-\frac{1}{64}$ | –.005 | –– |

DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

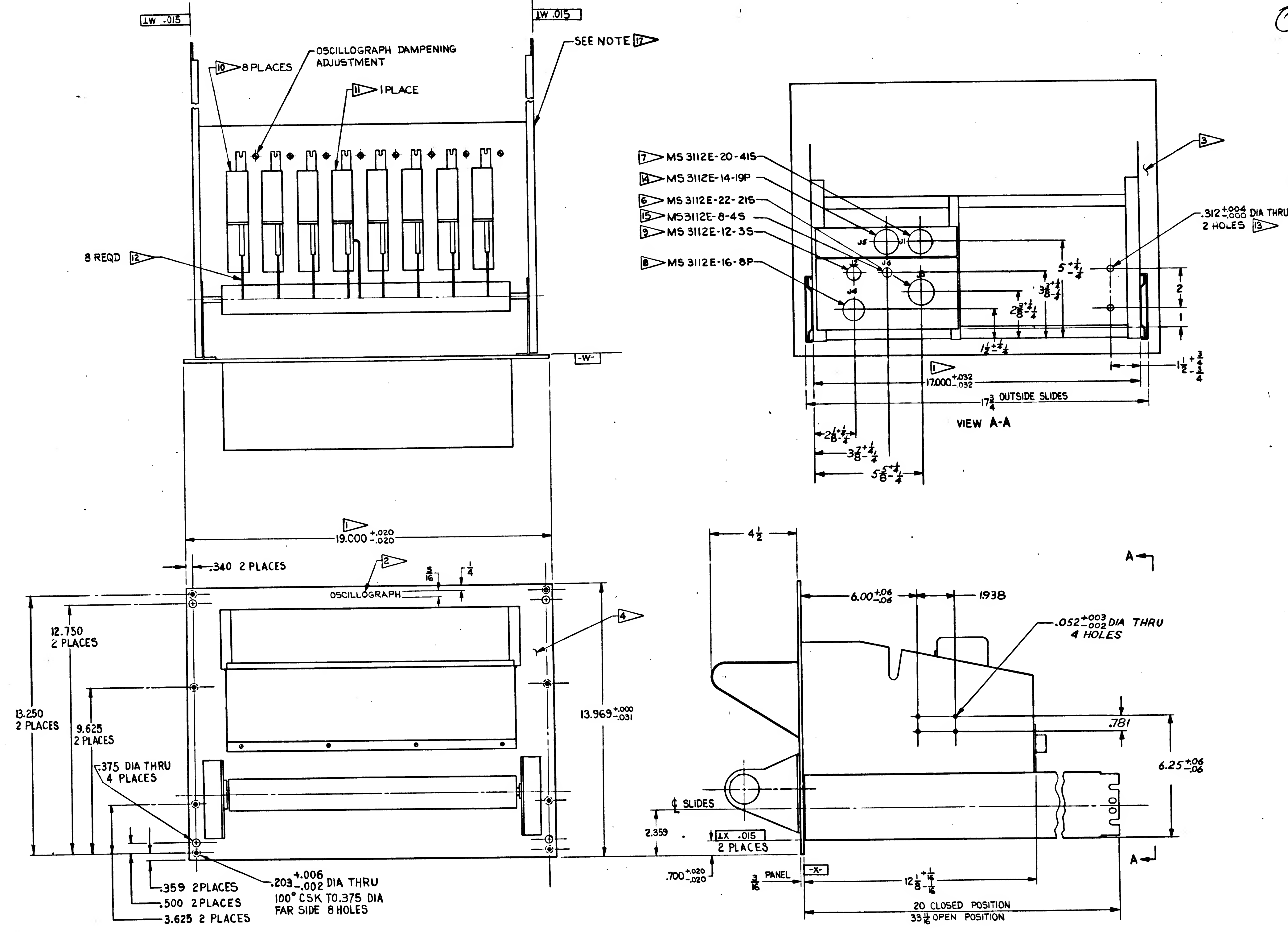
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Tomaschewski DATE 11 APR 63
CHECKED 23 APR 63
APPROVAL P. Rahn Apr 22, 1963
APPROVAL 23 APR 63
NASA APPROVAL 5/6/63
Lester Nehmann 5/8/63
MIT APPROVAL 5 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

OSCILLOGRAPH

CODE IDENT NO.
SIZE E
1900073
SCALE 1:2
SHEET 2 OF 2

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD |
|---|---|---|---|---|---|
| A |  | ADDED ITEM 1 IN LIST OF MATERIAL PER MXC 186915 |  | 7 MAY 63 | W.I. |
| A1 |  | CHANGE IN ACCORDANCE WITH MXC 186870 |  | 20 JUN 63 |  |
| B1 |  | CHANGE IN ACCORDANCE WITH MXC 187895 | — | 15 JUL 63 |  |
| C |  | CHANGE IN ACCORDANCE WITH MXC 188535 |  | 5 AUG 63 | C.A.M. / DLF |
| D |  | REVISION STATUS CHANGE PER MXC 188571 |  | 26 AUG 63 | C.A.M. / DLF |
| E |  | CHANGE IN ACCORDANCE WITH MXC 189023 TDRR 03212 |  | 30 AUG 63 | JHH |
| F2 | D-4<br>G-4 | ADDED (4) .052 HOLES & ASSOC. DIM. ADDED ASSOC. DIM. FOR J1 THRU J6 HOLES PER MXC 192078 PER TDRR 08200 |  | 20 NOV 63 | SH / JEL |
| G |  | REVISED PER TDRR 10205 |  | 30 JUN 64 |  |
| H |  | REVISED PER TDRR 10208 |  | 7 JUL 64 |  |



**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 11209 DATE 8 Aug 63

| SHEET 1 | SHEET 2 |
|---|---|
| H | H |
| G | G |
| F | F |
| E | E |
| D | D |
| C | C |
| B | B |
| A1 | A1 |

REVISION STATUS OF SHEETS

SEE NOTE 16

|  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|
|  |  |  | 1 |  | 1 | TBA | OSCILLOGRAPH (MODEL No. 850A/S1) |  |
|  |  |  | X |  | 2 | PS 1900047 | PROCUREMENT SPECIFICATION |  |
|  |  |  | ~~1~~ |  | ~~1~~ | ~~TBA~~ | ~~OSCILLOGRAPH (NOS 85-6000, 85-6...)~~ |  |
|  |  |  | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |  |
| QUANTITY REQUIRED |  |  |  |  | LIST OF PARTS AND MATERIALS |  |  |  |

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900047-011 | 1900000 | 011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

| FRACTIONS | DECIMALS | ANGLES |
|---|---|---|
| + 1/64 | +.005 | + — |
| - 1/64 | -.005 | - — |

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN R. Tamms DATE 11 APR 63
CHECKED 23 APR 63
APPROVAL R Rad Apr 23, 1963
APPROVAL 23 APR 63
NASA APPROVAL
Lester Goodman 5/8/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

OSCILLOGRAPH

CODE IDENT NO
SIZE E
1900073
SCALE 1:2
SHEET 1 OF 2

1900073

REQUIREMENTS:

THE RECORDING SYSTEM SHALL BE EIGHT (8) CHANNELS, EACH HAVING A FULL SCALE DEFLECTION OF 40 MM, ± 20 MM FROM CENTER ZERO, WITH RECTILINEAR READOUT USING INK AS A WRITING MEDIUM AND ELECTRIC WRITING AS AN ALTERNATE MEDIUM.

CHART SPEEDS: .5, 1, 2, 5, 10, 20, 50, 100 AND 200 MM PER SEC AND CM PER HR.

THE CHART FOR INK WRITING SHALL BE NOT LESS THAN 14 3/4 INCHES WIDE AND NOT LESS THAN 400 FEET LONG WITH EIGHT CHANNELS, EACH 40 MM WIDE AND GRADUATED IN ONE MM RECTANGULAR CO-ORDINATES. THE CHART FOR ELECTRIC WRITING SHALL BE THE SAME EXCEPT THE LENGTH SHALL NOT BE LESS THAN 250 FEET LONG.

A PAPER TAKE-UP SHALL BE PROVIDED.

A MANUAL EVENT MARKER OPERATED BY A PUSH BUTTON ON CONTROL, OSCILLOGRAPH P/N 1900072-011 PANEL FOR 60 CYCLE DISPLAY ON CENTER MARGIN OF CHART OR EQUIVALENT SHALL BE PROVIDED.

ZERO STABILITY SHALL BE .4 MM OR LESS FOR 8 HOURS.

GAIN STABILITY SHALL BE .25 MM OR LESS PER HOUR.

A FOOTAGE INDICATOR WHICH CONTINUOUSLY RECORDS THE REMAINING LENGTH OF CHART PAPER SHALL BE PROVIDED.

INPUT POWER: 105 TO 125 VOLTS 60 ± 5 CPS, SINGLE PHASE, 550 WATTS

1▷ 19 AND 17 INCH DIMENSIONS OF PANEL AND CHASSIS SHALL BE CENTRALIZED WITHIN .020 INCHES AT ASSEMBLY.
SIDES OF CHASSIS LOCATED BY 17 INCH DIMENSION SHALL BE PARALLEL WITHIN .031 INCHES AND PERPENDICULAR TO REAR SURFACE OF FRONT PANEL WITHIN .062 INCHES.

2▷ CHARACTERS: FUTURA DEMIBOLD. CHARACTER HEIGHT 1/8 INCH EXCEPT WHERE OTHERWISE SPECIFIED. SILK SCREEN PER ND 1002019 USING ENAMEL SEMI-GLOSS, INSTRUMENT BLACK, COLOR 514 OF ANA 157. (CENTRALIZE AS SHOWN.)

3▷ BORDER AREA, WITHIN 3/16 INCH OF THE PANEL EDGE ON THE REAR SURFACE OF THE FRONT PANEL SHALL BE CO-PLANAR AND FREE OF PROTRUSIONS.

4▷ FRONT PANEL FINISH: APPLY FINISH P513 OF SPECIFICATION MIL-F-14072. PRIME AND FINISH COATS TO BE APPLIED TO FRONT AND EDGES ONLY. APPLY 2 COATS OF TT-E-529A CLASS B ENAMEL, SEMI-GLOSS, LIGHT GRAY, COLOR 26440 OF FED-STD 595.
NOTE - MIL-P-8585 PRIMER SUPERCEDES MIL-P-6889

6▷ PIN LIST FOR CONNECTOR MS 3112E-22-21S (J3)

| INTERNAL CONNECTIONS | WIRE DESTINATION J1 (CONTROL, 1900072) |
|---|---|
| A | OPEN |
| B | B |
| C | C |
| D | D |
| E | E |
| F | F |
| G | G |
| H | H |
| J | J |
| K | K |
| L | L |
| M | M |
| N | N |
| P | P |
| R | R |
| S | S |
| T | T |
| U | U |
| V | OPEN |
| W | OPEN |
| X | OPEN |

7▷ PIN LIST FOR CONNECTOR MS 3112E-20-41S (J1)

| INTERNAL CONNECTIONS | | WIRE DESTINATION FROM CONNECTOR | | |
|---|---|---|---|---|
| A | | OPEN | | |
| B | P801 +SIG. IN | B | A1J2 (AMPLIFIER 1900070) | |
| C | P801 -SIG. IN | C | A1J2 (AMPLIFIER 1900070) | |
| D | P801 FEEDBACK | D | A1J2 (AMPLIFIER 1900070) | |
| E | | OPEN | | |
| F | | | | |
| G | | | | |
| H | | | | |
| J | | | | |
| K | | | | |
| L | | | | |
| M | | | | |
| N | | | | |
| O | | | | |
| P | | | | |
| R | | | | |
| S | | | | |
| T | | | | |
| U | | | | |
| V | | | | |
| W | | OPEN | | |
| X | P802 +SIG. IN | B | A2J2 | (AMPLIFIER 1900070) |
| Y | P802 -SIG. IN | C | A2J2 | |
| Z | P802 FEEDBACK | D | A2J2 | |
| a | P803 +SIG. IN | B | A3J2 | |
| b | P803 -SIG. IN | C | A3J2 | |
| c | P803 FEEDBACK | D | A3J2 | 1900070) |
| d | P808 +SIG. IN | B | A1J2 | 1900071) |
| e | P808 -SIG. IN | C | A1J2 | |
| f | P808 FEEDBACK | D | A1J2 | |
| g | P807 +SIG. IN | B | A2J2 | |
| h | P807 -SIG. IN | C | A2J2 | |
| i | P807 FEEDBACK | D | A2J2 | |
| j | P805 +SIG. IN | B | A4J2 | |
| k | P805 -SIG. IN | C | A4J2 | 1900071) |
| m | P804 +SIG. IN | B | A4J2 | 1900070) |
| n | P804 -SIG. IN | C | A4J2 | 1900070) |
| p | P804 FEEDBACK | D | A4J2 | 1900070) |
| q | P806 +SIG. IN | B | A3J2 | 1900071) |
| r | P806 -SIG. IN | C | A3J2 | |
| s | P806 FEEDBACK | D | A3J2 | |
| t | P805 FEEDBACK | D | A4J2 | (AMPLIFIER 1900071) |

8▷ PIN LIST FOR CONNECTOR MS 3112E-16-8P (J4)

| PIN LETTER | CONNECTION |
|---|---|
| A | CHASSIS GROUND |
| B | OPEN |
| C | OPEN |
| D | 115 V 60 CPS (HI) |
| E | 115 V 60 CPS (LO) |
| F | OPEN |
| G | OPEN |
| H | OPEN |

THE SUPPLIERS NAME, ADDRESS AND PART NUMBER SHALL BE PLACED ON THE OUTSIDE SURFACE OF THE REAR PLATE. THIS INFORMATION SHALL NOT APPEAR ON THE FRONT PANEL.

THE OSCILLOGRAPH AMPLIFIER P/N 1900070-011, OSCILLOGRAPH AMPLIFIER P/N 1900071-011, OSCILLOGRAPH CONTROL P/N 1900072-011 OSCILLOGRAPH P/N 1900073-011 AND PEN CONTROL ELECTRIC OSCILLOGPAPH P/N 1900165-011 SHALL BE ELECTRICALLY COMPATIBLE WITH EACH OTHER. THEN SHALL BE MATED AND THE FIVE DRAWERS TESTED AS ONE UNIT, EXCEPT AS SPECIFIED IN NOTE 16. THE UNIT SHALL PASS ALL THE TESTS CALLED OUT IN ND-1002208.

AUXILIARY ITEMS (IDENTIFIED BY MASSA PART NUMBER) TO BE SUPPLIED AS PART OF THIS ASSEMBLY:
- 1 DISPOSABLE INK CARTRIDGE, COLOR BLUE PER MODEL A-14040-501
- 1 INK-WRITING STYLI FOR USE WITH THE OSCILLOGRAPH (OS-600) 4 CM PEAK-TO-PEAK DEFLECTION MODEL 20756.
- 2 ROLLS OF INK CHART PAPER, 400 FEET, 4 CM SCALE GRADUATED IN MM DIVISIONS NO. 841 K SPECTOGRAPH GRAY.
- 1 AMPLIFIER PATCH CHORD CB-200.
- 1 FEOLA INK PUMP MODEL A-6132-1 OR EQUIVALENT
- 9 ELECTRIC STYLI (MODEL 20758)
- 2 ROLLS OF ELECTRIC CHART PAPER 250 FEET, 4 CM SCALE GRADUATED IN MM DIVISIONS NO. 842 E RED.

10▷ REQUIREMENTS FOR (MASSA P/N OS-600D) AND (MASSA P/N OS-610D) PEN MOTORS
THE PEN MOTORS SHALL HAVE A MINIMUM FREQUENCY RESPONSE, 0 TO 45 CPS WITHIN 3 DB FOR 40 MM PEAK-TO-PEAK DEFLECTION AND 45 TO 120 CPS WITHIN 3 DB FOR 10 MM PEAK-TO-PEAK DEFLECTION.
STEP RESPONSE 90% IN 5 MILLISECONDS OR LESS, WITH LESS THAN 4% OVERSHOOT.
THE DEVIATION FROM LINEARITY SHALL BE LESS THAN .4 MM OVER THE 40 MM SCALE.
CURRENT SENSITIVITY: 28 MA PER MM
COIL RESISTANCE: 16 OHMS (DC)
EACH PEN MOTOR SHALL HAVE INDIVIDUAL ADJUSTMENTS FOR ALIGNMENT OF BOTH LATERAL AND LONGITUDINAL POSITION, AND INDIVIDUAL DAMPING POTENTIOMETERS WITH A RANGE OF 60% TO 110% OF CRITICAL DAMPING.
PEN MOTOR HYSTERESIS SHALL BE LESS THAN ONE QUARTER MM.
THE UNIT SHALL BE COMPATIBLE WITH DRIVER AMPLIFIER P/N 1900069-011, DC PREAMP P/N 1900074-011 AND PHASE SENSITIVE DEMODULATOR P/N 1900068-011.
NATURAL FREQUENCY: 45 CPS

11▷ OS-610D PEN MOTOR ONLY
AN EVENT MARKER SHALL BE PROVIDED WHICH WILL AUTOMATICALLY PULSE EVERY SECOND WHEN THE MM PER SEC CHART SPEEDS ARE ENGAGED

12▷ PEN 20756 SAPPHIRE TIP, STANDARD FOR INK WRITING (4 CM DEFLECTION).

13▷ ALLOW 1/2 INCH CLEARANCE BEHIND HOLES.

LATCHING MECHANISM INCLUDED AS PART OF FRONT PANEL HANDLES SHALL BE CAPABLE OF SECURING OSCILLOGRAPH TO CONSOLE WITH A 3/16 INCH R.F.I. GASKET (COMPRESSES TO 1/8 INCH) BETWEEN CONSOLE AND BACK OF FRONT PANEL.
CHARACTERS IN AREAS OTHER THAN THOSE ON FRONT PANEL SHALL BE $\frac{1}{8}{}^{+\frac{1}{16}}_{-0}$, LEGIBLY APPLIED PER ND 1002019.
INNER MEMBER OF CHASSIS TRACK SLIDE SHALL BE OF THE NON-TILTING TYPE.

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70323.

FRONT PANEL MATERIAL: ALUMINUM ALLOY 2024-T3 (QQ-A-355 TEMPER T-3) FINISH ON FRONT BEFORE PAINTING (AS ROLLED).

DATA SOURCE:
MASSA DIVISION
HINGHAM, MASS
CD 1200A (MODIFIED)

9▷ PIN LIST FOR CONNECTOR MS 3112E-12-3S (J2)

| INTERNAL CONNECTIONS PIN LETTER | | DESTINATION (J4 OSCILLOGRAPH AMP 1900070) PIN LETTERS |
|---|---|---|
| A | OPEN | A |
| B | 115 V 60 CPS LO | B |
| C | 115 V 60 CPS HI | C |
| | | D |
| | | E |
| | | F |

14▷ PIN LIST FOR CONNECTOR MS 3112E-14-19P (J5)
WIRE DESTINATION — (PEN CONTROL ELECTRIC OSCILLOGRAPH P/N 1900165)

| INTERNAL CONNECTIONS J5 | WIRE DESTINATION J2 |
|---|---|
| A | OPEN |
| B | B |
| C | C |
| D | D |
| E | E |
| F | OPEN |
| G | |
| H | |
| J | OPEN |
| K | K |
| L | L |
| M | M |
| N | N |
| P | P |
| R | OPEN |
| S | |
| T | OPEN |
| U | U |
| V | V |

15▷ PIN LIST FOR CONNECTOR MS 3112E-8-4S (J6)
WIRE DESTINATION — (PEN CONTROL ELECTRIC OSCILLOGRAPH P/N 1900165)

| INTERNAL CONNECTIONS J6 | WIRE DESTINATION J1 |
|---|---|
| A | OPEN |
| B | B 115V. 60~ HI |
| C | C 115V. 60~ LO |
| D | OPEN |

16▷ WHEN THE OSCILLOGRAPH IS SOLD INDEPENDENTLY OF OSCILLOGRAPH AMPLIFIERS 1900070-011 AND 1900071-011 AND CONTROL OSCILLOGRAPH 1900072-011, AND ELECTRIC PEN CONTROL 1900165-011, IT SHALL PASS ONLY THE TESTS OF SECTION 4 OF THE PROCUREMENT SPEC PS-1900047.

17▷ ADJUST SLIDE POSITION BY ADDING SHIMS IF NECESSARY.

**FOR INFORMATION ONLY**
CLASS B RELEASE TDR No. 01209 DATE 8 May 63

REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
|---|---|---|---|---|---|
| A | | ADDED ITEM 1 IN LIST OF MATERIAL PER MXC 186915 | | 7 MAY 63 | WK |
| A1 | | CHANGE IN ACCORDANCE WITH MXC 186870 | | 20 JUN 63 | [illegible] |
| B1 | | CHANGE IN ACCORDANCE WITH MXC 187895 | — | 15 JUL 63 | WM |
| C | | CHANGE IN ACCORDANCE WITH MXC 188535 | | 15 AUG 63 | C.A.M. |
| D | | CHANGE IN ACCORDANCE WITH MXC 188571 | | 26 AUG 63 | C.A.M. DLF |
| E | | CHANGE IN ACCORDANCE WITH MXC 189023 TDRR [illegible] | | 30 AUG 63 | JHH |
| F | E-8 | REM'D ▷ EXACT CONN LOC ON REAR OF ASSY SHALL BE DETERMINED BY SUP. PER MXC 192078 TDRR 08800 | | 20 NOV 63 | SH JEL |
| G | | REVISED PER TDRR 10205 | | 30 JUN 64 | [illegible] |
| H | | REVISED PER TDRR 10208 | | 9 JUL 64 | [illegible] |

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900047-011 | 1900000 | |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

| FRACTIONS | DECIMALS | ANGLES |
|---|---|---|
| $+\frac{1}{64}$ | +.005 | +— |
| $-\frac{1}{64}$ | -.005 | -— |

DO NOT SCALE THIS DRAWING
MATERIAL --
CONTRACT NAS 9-497

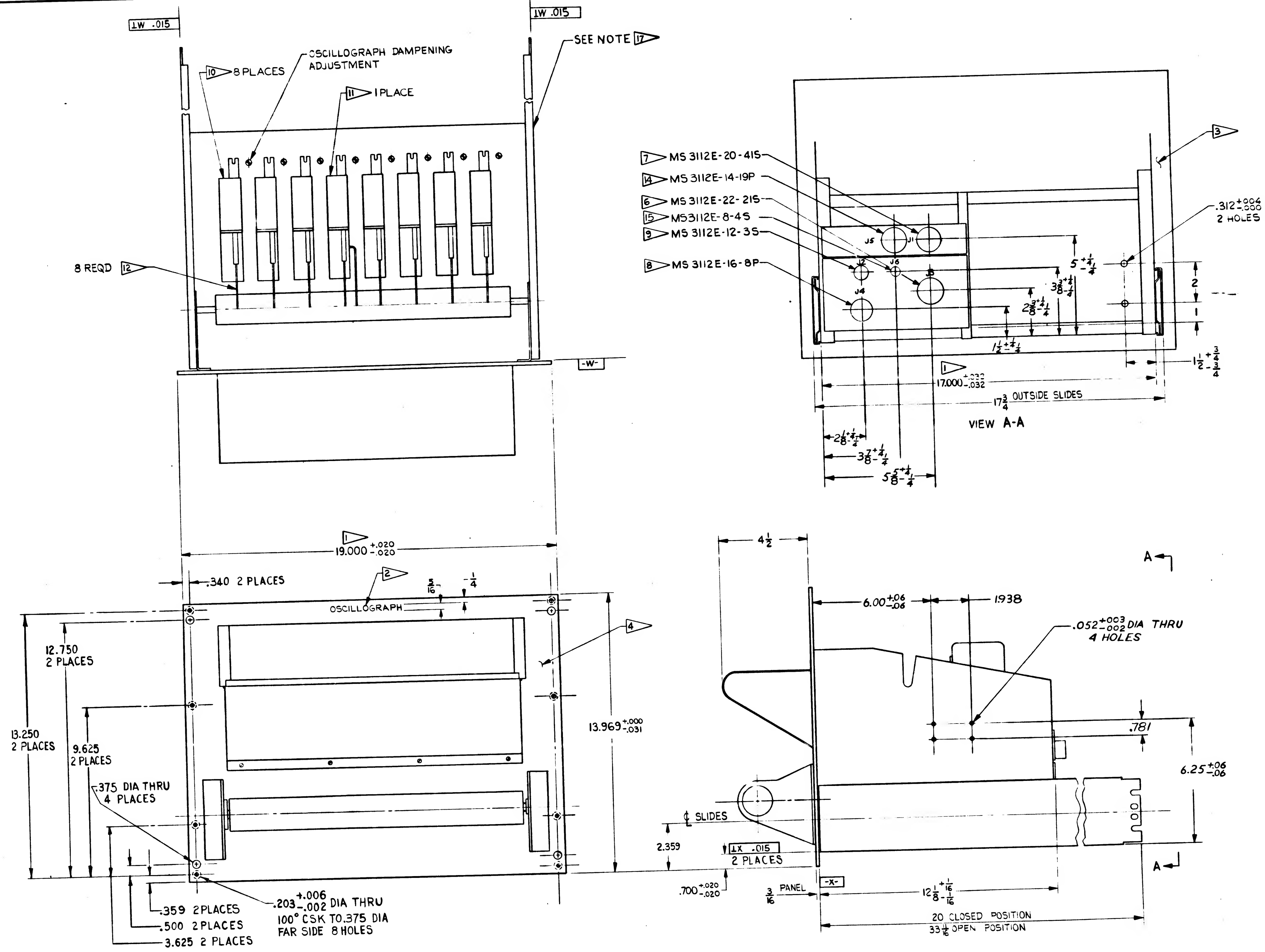
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Tamulevicz DATE 11 APR 63
CHECKED 23 APR 63
APPROVAL Apr 23, 1963
APPROVAL 23 APR 63
NASA APPROVAL 5/8/63
MIT APPROVAL 8 May 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

OSCILLOGRAPH

CODE IDENT NO.
SIZE E
1900073
SCALE 1:2
SHEET 2 OF 2

| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
|---|---|---|---|---|---|
| A |  | [illegible] PER MXC 186915 |  | [illegible] |  |
| A1 |  | CHANGE IN ACCORDANCE WITH MXC 186870 |  | 20 JUN 63 |  |
| B |  | CHANGE IN ACCORDANCE WITH MXC [illegible] | — | [illegible] |  |
| C |  | CHANGE IN ACCORDANCE WITH MXC 188535 |  | 5 AUG 63 |  |
| D |  | REVISION STATUS CHANGE PER MXC 188571 |  | 26 AUG 63 | AM |
| E |  | CHANGE IN ACCORDANCE WITH MXC 189023 |  | 30 AUG 63 | JHH |
| F2 | D-4<br>G-4 | ADDED (4) .052 HOLES & ASSOC. DIM<br>ADDED ASSOC. DIM FOR J1 THRU J6 HOLES PER MXC 192078 TORR 08200 |  | [illegible] NOV 63 |  |
| G |  | REVISED PER TORR 10205 |  | 30 [illegible] 64 |  |
| H |  | REVISED PER TORR 10208 |  | 7 [illegible] 64 |  |
| J |  | CHANGE IN ACCORDANCE WITH ECM 304039 TORR 14896 | — | 27 OCT 64 | PHG |



FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 11209 DATE 8 May 6

| J | J |
|---|---|
| H | H |
| G | G |
| F | F |
| E | E |
| D | D |
| C | C |
| B | B |
| A1 | A1 |
| SHEET 1 | SHEET 2 |

REVISION STATUS OF SHEETS

SEE NOTE 16

| QUANTITY REQUIRED |  |  |  | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
|  |  |  | 011 |  |  |  |  |
|  |  |  | 1 |  | 1 | TBA | OSCILLOGRAPH MODEL [illegible] |
|  |  |  | X |  | 2 | PS1900047 | PROCUREMENT SPECIFICATION |
|  |  |  |  |  | ~~1~~ | ~~TBA~~ | ~~OSCILLOGRAPH [illegible]~~ |

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| [illegible] | 1900000 |  |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± 1/64 DECIMALS ± .005 ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-437

AC SPARK PLUG DIVISION, GMC
MILWAUKEE WISCONSIN
ACSP PN
DRAWN DATE 1 APR 63
CHECKED 23 APR 63
APPROVAL 23 1963
APPROVAL
NASA APPROVAL
Lester [illegible] 5/8/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

OSCILLOGRAPH

CODE IDENT NO
SIZE E
1900073
SCALE 1:2
SHEET 1 OF 2

1900073 J

REQUIREMENTS:

THE RECORDING SYSTEM SHALL BE EIGHT (8) CHANNELS, EACH HAVING A FULL SCALE DEFLECTION OF 40 MM, ±20 MM FROM CENTER ZERO, WITH RECTILINEAR READOUT USING INK AS A WRITING MEDIUM AND ELECTRIC WRITING AS AN ALTERNATE MEDIUM.

CHART SPEEDS: .5, 1, 2, 5, 10, 20, 50, 100 AND 200 MM PER SEC AND CM PER HR.

THE CHART FOR INK WRITING SHALL BE NOT LESS THAN 14 $\frac{3}{4}$ INCHES WIDE AND NOT LESS THAN 400 FEET LONG WITH EIGHT CHANNELS, EACH 40 MM WIDE AND GRADUATED IN ONE MM RECTANGULAR CO-ORDINATES. THE CHART FOR ELECTRIC-WRITING SHALL BE THE SAME EXCEPT THE LENGTH SHALL NOT BE LESS THAN 250 FEET LONG.

A PAPER TAKE-UP SHALL BE PROVIDED.

A MANUAL EVENT MARKER OPERATED BY A PUSH BUTTON ON CONTROL, OSCILLOGRAPH P/N 1900072-011 PANEL FOR 60 CYCLE DISPLAY ON CENTER MARGIN OF CHART OR EQUIVALENT SHALL BE PROVIDED.

ZERO STABILITY SHALL BE .4 MM OR LESS FOR 8 HOURS.

GAIN STABILITY SHALL BE .25 MM OR LESS PER HOUR.

A FOOTAGE INDICATOR WHICH CONTINUOUSLY RECORDS THE REMAINING LENGTH OF CHART PAPER SHALL BE PROVIDED.

INPUT POWER: 105 TO 125 VOLTS 60±5 CPS, SINGLE PHASE, 550 WATTS.

1 ▷ 19 AND 17 INCH DIMENSIONS OF PANEL AND CHASSIS SHALL BE CENTRALIZED WITHIN .020 INCHES AT ASSEMBLY.
SIDES OF CHASSIS LOCATED BY 17 INCH DIMENSION SHALL BE PARALLEL WITHIN .031 INCHES AND PERPENDICULAR TO REAR SURFACE OF FRONT PANEL WITHIN .062 INCHES.

2 ▷ CHARACTERS: FUTURA DEMIBOLD. CHARACTER HEIGHT $\frac{1}{8}$ INCH EXCEPT WHERE OTHERWISE SPECIFIED. SILK SCREEN PER ND 1002019 USING ENAMEL SEMI-GLOSS, INSTRUMENT BLACK, COLOR 514 OF ANA 157. (CENTRALIZE AS SHOWN.)

3 ▷ BORDER AREA, WITHIN $\frac{9}{16}$ INCH OF THE PANEL EDGE ON THE REAR SURFACE OF THE FRONT PANEL SHALL BE CO-PLANAR AND FREE OF PROTRUSIONS.

4 ▷ FRONT PANEL FINISH: APPLY FINISH P513 OF SPECIFICATION MIL-F-14072.
PRIME AND FINISH COATS TO BE APPLIED TO FRONT AND EDGES ONLY.
APPLY 2 COATS OF TT-E-529A CLASS B ENAMEL, SEMI-GLOSS, LIGHT GRAY, COLOR 26440 OF FED-STD 595.
NOTE - MIL-P-8585 PRIMER SUPERCEDES MIL-P-6889

6 ▷ PIN LIST FOR CONNECTOR MS3112E-22-21S (J3)

| INTERNAL CONNECTIONS | WIRE DESTINATION J1 (CONTROL, 1900072) |
|---|---|
| A | OPEN |
| B | B |
| C | C |
| D | D |
| E | E |
| F | F |
| G | G |
| H | H |
| J | J |
| K | K |
| L | L |
| M | M |
| N | N |
| P | P |
| R | R |
| S | S |
| T | T |
| U | U |
| V | OPEN |
| W | OPEN |
| X | OPEN |

7 ▷ PIN LIST FOR CONNECTOR MS3112E-20-41S (J1)

| INTERNAL CONNECTIONS | | WIRE DESTINATION FROM CONNECTOR | |
|---|---|---|---|
| A | | OPEN | |
| B | P801 +SIG. IN | B | A1J2 (AMPLIFIER 1900070) |
| C | P801 -SIG. IN | C | A1J2 (AMPLIFIER 1900070) |
| D | P801 FEEDBACK | D | A1J2 (AMPLIFIER 1900070) |
| E | | OPEN | |
| F | | | |
| G | | | |
| H | | | |
| J | | | |
| K | | | |
| L | | | |
| M | | | |
| N | | | |
| O | | | |
| P | | | |
| R | | | |
| S | | | |
| T | | | |
| U | | | |
| V | | | |
| W | | OPEN | |
| X | P802 +SIG. IN | B | A2J2 (AMPLIFIER 1900070) |
| Y | P802 - SIG. IN | C | A2J2 |
| Z | P802 FEEDBACK | D | A2J2 |
| a | P803 +SIG. IN | B | A3J2 |
| b | P803 -SIG. IN | C | A3J2 |
| c | P803 FEEDBACK | D | A3J2 1900070) |
| d | P808 +SIG. IN | B | A1J2 1900071) |
| e | P808 -SIG. IN | C | A1J2 |
| f | P808 FEEDBACK | D | A1J2 |
| g | P807 +SIG. IN | B | A2J2 |
| h | P807 -SIG. IN | C | A2J2 |
| i | P807 FEEDBACK | D | A2J2 |
| j | P805 +SIG. IN | B | A4J2 1900071) |
| k | P805 -SIG. IN | C | A4J2 1900070) |
| m | P804 +SIG. IN | B | A4J2 1900070) |
| n | P804 -SIG. IN | C | A4J2 1900070) |
| p | P804 FEEDBACK | D | A4J2 1900071) |
| q | P806 +SIG. IN | B | A3J2 |
| r | P806 -SIG. IN | C | A3J2 |
| s | P806 FEEDBACK | D | A3J2 |
| t | P805 FEEDBACK | D | A4J2 (AMPLIFIER 1900071) |

8 ▷ PIN LIST FOR CONNECTOR MS3112E-16-8P (J4)

| PIN LETTER | CONNECTION |
|---|---|
| A | CHASSIS GROUND |
| B | OPEN |
| C | OPEN |
| D | 115V 60CPS (HI) |
| E | 115V 60CPS (LO) |
| F | OPEN |
| G | OPEN |
| H | OPEN |

THE SUPPLIERS NAME, ADDRESS AND PART NUMBER SHALL BE PLACED ON THE OUTSIDE SURFACE OF THE REAR PLATE. THIS INFORMATION SHALL NOT APPEAR ON THE FRONT PANEL.

THE OSCILLOGRAPH AMPLIFIER P/N 1900070-011 OR-021, OSCILLOGRAPH AMPLIFIER P/N 1900071-011 OR-021, OSCILLOGRAPH CONTROL P/N 1900072-011, OSCILLOGRAPH P/N 1900073-011 AND PEN CONTROL ELECTRIC OSCILLOGRAPH P/N 1900165 SHALL BE ELECTRICALLY COMPATIBLE WITH EACH OTHER THEN SHALL BE MATED AND THE FIVE DRAWERS TESTED AS ONE UNIT, EXCEPT AS SPECIFIED IN NOTE 16. THE UNIT SHALL PASS ALL THE TESTS CALLED OUT IN ND-1002205.

AUXILIARY ITEMS (IDENTIFIED BY MASSA PART NUMBER) TO BE SUPPLIED AS PART OF THIS ASSEMBLY:
- 1 DISPOSABLE INK CARTRIDGE, COLOR BLUE PER MODEL A-14040-501
- 1 INK-WRITING STYLI FOR USE WITH THE OSCILLOGRAPH (OS-600) 4 CM PEAK-TO-PEAK DEFLECTION MODEL 20756.
- 2 ROLLS OF INK CHART PAPER, 400 FEET, 4 CM SCALE GRADUATED IN MM DIVISIONS NO. 841 K SPECTOGRAPH GRAY.
- 1 AMPLIFIER PATCH CHORD CB-200.
- 1 FEOLA INK PUMP MODEL A-6132-1 OR EQUIVALENT
- 9 ELECTRIC STYLI (MODEL 20758)
- 2 ROLLS OF ELECTRIC CHART PAPER 250 FEET, 4 CM SCALE GRADUATED IN MM DIVISIONS NO. 842 E RED.

10 ▷ REQUIREMENTS FOR (MASSA P/N OS-600D) AND (MASSA P/N OS-610D) PEN MOTORS
THE PEN MOTORS SHALL HAVE A MINIMUM FREQUENCY RESPONSE, 0 TO 45 CPS WITHIN 3DB FOR 40 MM PEAK-TO-PEAK DEFLECTION AND 45 TO 120 CPS WITHIN 3DB FOR 10 MM PEAK-TO-PEAK DEFLECTION.
STEP RESPONSE 90% IN 5 MILLISECONDS OR LESS, WITH LESS THAN 4% OVERSHOOT.
THE DEVIATION FROM LINEARITY SHALL BE LESS THAN .4MM OVER THE 40 MM SCALE.
CURRENT SENSITIVITY: 28 MA PER MM
COIL RESISTANCE: 16 OHMS (DC)
EACH PEN MOTOR SHALL HAVE INDIVIDUAL ADJUSTMENTS FOR ALIGNMENT OF BOTH LATERAL AND LONGITUDINAL POSITION, AND INDIVIDUAL DAMPING POTENTIOMETERS WITH A RANGE OF 60% TO 110% OF CRITICAL DAMPING.
PEN MOTOR HYSTERESIS SHALL BE LESS THAN ONE QUARTER MM.
THE UNIT SHALL BE COMPATIBLE WITH DRIVER AMPLIFIER P/N 1900068-011, DC PREAMP P/N 1900074-011 AND PHASE SENSITIVE DEMODULATOR P/N 1901755-011
NATURAL FREQUENCY: 45 CPS

11 ▷ OS-610D PEN MOTOR ONLY
AN EVENT MARKER SHALL BE PROVIDED WHICH WILL AUTOMATICALLY PULSE EVERY SECOND WHEN THE MM PER SEC CHART SPEEDS ARE ENGAGED

12 ▷ PEN 20756 SAPPHIRE TIP, STANDARD FOR INK WRITING (4 CM DEFLECTION).

13 ▷ ALLOW $\frac{1}{2}$ INCH CLEARANCE BEHIND HOLES.

LATCHING MECHANISM INCLUDED AS PART OF FRONT PANEL HANDLES SHALL BE CAPABLE OF SECURING OSCILLOGRAPH TO CONSOLE WITH A $\frac{3}{16}$ INCH R.F.I. GASKET (COMPRESSES TO $\frac{1}{8}$ INCH) BETWEEN CONSOLE AND BACK OF FRONT PANEL.
CHARACTERS IN AREAS OTHER THAN THOSE ON FRONT PANEL SHALL BE $\frac{1}{8}{}^{+\frac{1}{16}}_{-0}$, LEGIBLY APPLIED PER ND 1002019.
INNER MEMBER OF CHASSIS TRACK SLIDE SHALL BE OF THE NON-TILTING TYPE.

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70323.

FRONT PANEL MATERIAL: ALUMINUM ALLOY 2024-T3 (QQ-A-355 TEMPER T-3) FINISH ON FRONT BEFORE PAINTING (AS ROLLED).

DATA SOURCE:
MASSA DIVISION
HINGHAM MASS
CD1200A (MODIFIED)

9 ▷ PIN LIST FOR CONNECTOR MS3112E-12-3S (J2)

| INTERNAL CONNECTIONS PIN LETTER | | DESTINATION (J4 OSCILLOGRAPH AMP 1900070) PIN LETTERS |
|---|---|---|
| A | OPEN | A |
| B | 115V 60 CPS LO | B |
| C | 115V 60 CPS HI | C |
| | | D |
| | | E |
| | | F |

14 ▷ PIN LIST FOR CONNECTOR MS3112E-14-19P (J5)

| INTERNAL CONNECTIONS J5 | WIRE DESTINATION — (PEN CONTROL ELECTRIC OSCILLOGRAPH P/N 1900165) J2 |
|---|---|
| A | OPEN |
| B | B |
| C | C |
| D | D |
| E | E |
| F | OPEN |
| G | |
| H | |
| J | OPEN |
| K | K |
| L | L |
| M | M |
| N | N |
| P | P |
| R | OPEN |
| S | |
| T | OPEN |
| U | U |
| V | V |

15 ▷ PIN LIST FOR CONNECTOR MS3112E-8-4S (J6)

| INTERNAL CONNECTIONS J6 | WIRE DESTINATION — (PEN CONTROL ELECTRIC OSCILLOGRAPH P/N 1900165) J1 |
|---|---|
| A | OPEN |
| B | B 115V 60~ HI |
| C | C 115V.60~ LO |
| D | OPEN |

16 ▷ WHEN THE OSCILLOGRAPH IS SOLD INDEPENDENTLY OF THE OSCILLOGRAPH AMPLIFIERS, CONTROL OSCILLOGRAPH, AND ELECTRIC PEN CONTROL IT SHALL PASS ONLY THE TESTS OF SECTION 4 OF THE PROCUREMENT SPECIFICATION PS 1900047.

17 ▷ ADJUST SLIDE POSITION BY ADDING SHIMS IF NECESSARY.

REVISIONS

| SYM | ZONE | DESCRIPTION | CHG | DATE | APPD |
|---|---|---|---|---|---|
| A | | ADDED ITEM 1 IN LIST OF MATERIAL PER MXC 186915 | | | |
| A1 | | CHANGE IN ACCORDANCE WITH MXC 186870 | | 63 | |
| B1 | | CHANGE IN ACCORDANCE WITH MXC 187895 | — | 15 JUL 63 | WM |
| C | | CHANGE IN ACCORDANCE WITH MXC 188535 | | 15 AUG 63 | C.A.M. |
| D | | CHANGE IN ACCORDANCE WITH MXC 188571 | | 26 AUG 63 | C.A.M. |
| E | | CHANGE IN ACCORDANCE WITH MXC 189023 | | 30 AUG 63 | JHH |
| F | E-8 | REM'D 5 ▷ EXACT CONN LOC ON REAR OF ASSY SHALL BE DETERMINED BY SUP. PER MXC 192378 TORE 08200 | | 20 63 | S H |
| G | | REVISED PER TDRR 10205 | | 30 JUN 64 | |
| H | | REVISED PER TDRR 10208 | | 7 64 | |
| J | | CHANGE IN ACCORDANCE WITH ECM 304039 | | 27 OCT 64 | PHG |

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. C12 DATE 8 May 63

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| APPLICATION | | |

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

| FRACTIONS | DECIMALS | ANGLES |
|---|---|---|
| $+\frac{1}{64}$ | +.005 | +— |
| $-\frac{1}{64}$ | -.005 | -— |

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION. GMC
MILWAUKEE WISCONSIN

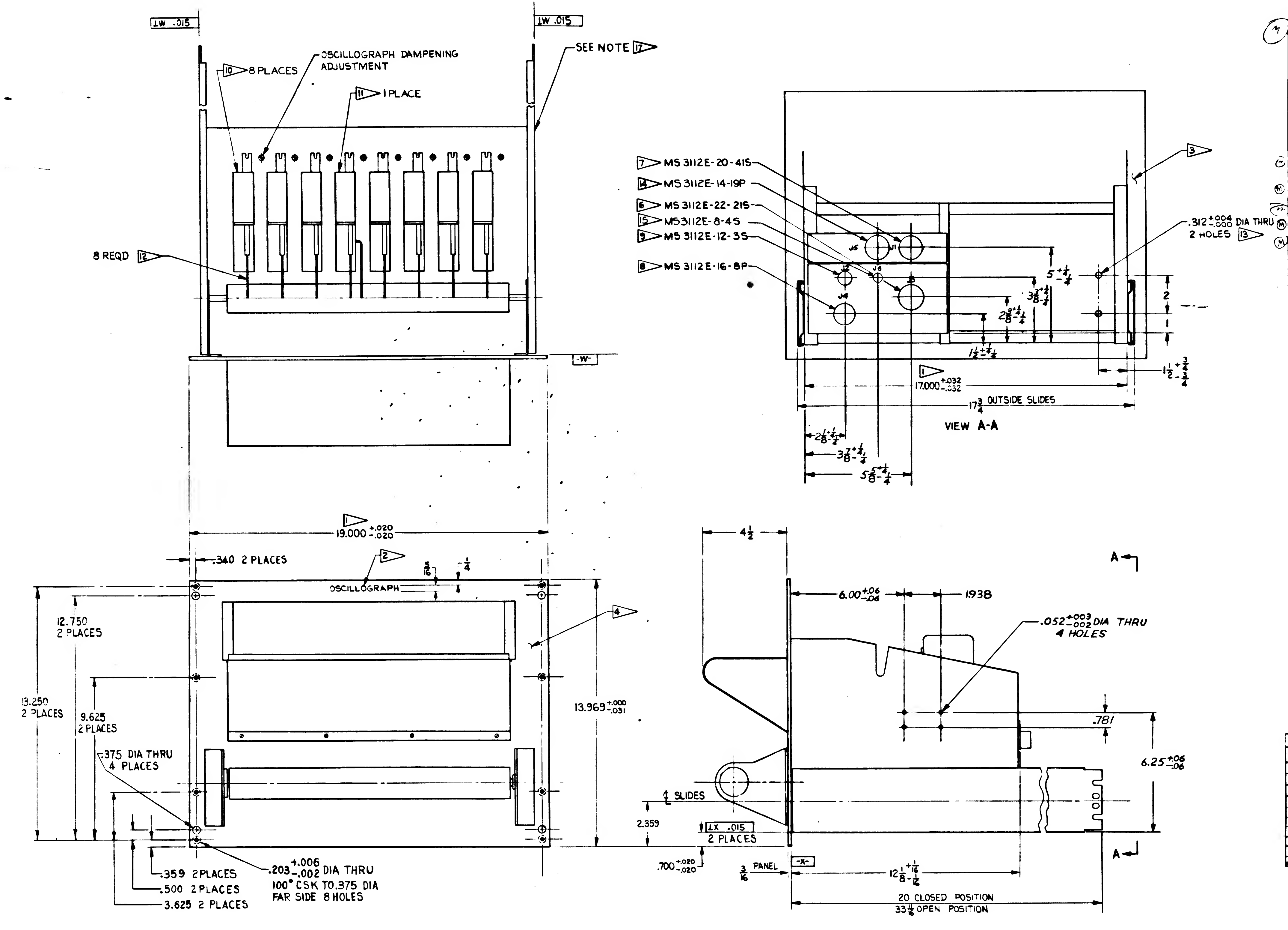
ACSP PN
DRAWN DATE 11 APR 63
CHECKED
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

OSCILLOGRAPH

CODE IDENT NO
SIZE E
1900073
SCALE 1:2
SHEET 2 OF 5

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| A | | [illegible] MATERIAL PER MXC 186915 | | MAY 63 | |
| A1 | | CHANGE IN ACCORDANCE WITH MXC 186870 | | 20 JUN 63 | |
| B1 | | CHANGE IN ACCORDANCE WITH MXC 187895 | — | 15 JUL 63 | |
| C | | CHANGE IN ACCORDANCE WITH MXC 188535 | | 15 AUG 63 | CAM DLF |
| D | | REVISION STATUS CHANGE PER MXC 188571 | | 26 AUG 63 | CAM DLF |
| E | | CHANGE IN ACCORDANCE WITH MXC 189023 | | 30 AUG 63 | JHH |
| F2 | D-4<br>G-4 | ADDED (4) .052 HOLES & ASSOC. DIM<br>ADDED ASSOC. DIM. FOR J1 THRU J6 HOLES<br>~~PER MXC 192078~~ PER TDRR 08200 | | 20 NOV 63 | JH JCL |
| G | | REVISED PER TDRR 10205 | | 30 JUN 64 | |
| H | | REVISED PER TDRR 10208 | | 7 JUL 64 | |
| J | | CHANGE IN ACCORDANCE WITH ECM 304039 TDRR 14896 | — | 27 OCT 64 | |
| K | | REPLACED WITH CHANGE BY REV L PER TDRR 18659 | — | 4 MAY 65 | |



**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 2209 DATE 5/4/6

| SHEET 1 | SHEET 2 |
|---|---|
| K | K |
| J | J |
| H | H |
| G | G |
| F | F |
| E | E |
| D | D |
| C | C |
| B | B |
| A1 | A1 |

REVISION STATUS OF SHEETS

Ⓚ **REPLACED WITH CHANGE BY REV L**

SEE NOTE 16

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | 1 | | 1 | TBA | OSCILLOGRAPH (MODEL NO 8504/S1) |
| | | | X | | 2 | PS 1900047 | PROCUREMENT SPECIFICATION |
| | | | | | ~~1~~ | ~~TBA~~ | ~~OSCILLOGRAPH (NOS [illegible])~~ |
| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| QUANTITY REQUIRED | | | | | LIST OF PARTS AND MATERIALS | | |

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900047-011 | 1900000 | [illegible] |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

| FRACTIONS | DECIMALS | ANGLES |
|---|---|---|
| + 1/64 | +.005 | + — |
| − 1/64 | −.005 | − — |

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN R. Tamsen DATE 11 APR 63
CHECKED 23 APR 63
APPROVAL Apr 23, 1963
APPROVAL 23 APR 63

NASA APPROVAL
Lester Liedman 5/8/63

MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

OSCILLOGRAPH

CODE IDENT NO

SIZE E

1900073

SCALE 1:2

SHEET 1 OF 2

1900073 K

REQUIREMENTS:

THE RECORDING SYSTEM SHALL BE EIGHT (8) CHANNELS, EACH HAVING A FULL SCALE DEFLECTION OF 40 MM, ±20 MM FROM CENTER ZERO, WITH RECTILINEAR READOUT USING INK AS A WRITING MEDIUM AND ELECTRIC WRITING AS AN ALTERNATE MEDIUM.

CHART SPEEDS: .5, 1, 2, 5, 10, 20, 50, 100 AND 200 MM PER SEC AND CM PER HR.

THE CHART FOR INK WRITING SHALL BE NOT LESS THAN 14 $\frac{3}{4}$ INCHES WIDE AND NOT LESS THAN 400 FEET LONG WITH EIGHT CHANNELS, EACH 40 MM WIDE AND GRADUATED IN ONE MM RECTANGULAR CO-ORDINATES. THE CHART FOR ELECTRIC WRITING SHALL BE THE SAME EXCEPT THE LENGTH SHALL NOT BE LESS THAN 250 FEET LONG.

A PAPER TAKE-UP SHALL BE PROVIDED.

A MANUAL EVENT MARKER OPERATED BY A PUSH BUTTON ON CONTROL, OSCILLOGRAPH P/N 1900072-011 PANEL FOR 60 CYCLE DISPLAY ON CENTER MARGIN OF CHART OR EQUIVALENT SHALL BE PROVIDED.

ZERO STABILITY SHALL BE .4 MM OR LESS FOR 8 HOURS.

GAIN STABILITY SHALL BE .25 MM OR LESS PER HOUR.

A FOOTAGE INDICATOR WHICH CONTINUOUSLY RECORDS THE REMAINING LENGTH OF CHART PAPER SHALL BE PROVIDED.

INPUT POWER: 105 TO 125 VOLTS 60±5 CPS, SINGLE PHASE, 550 WATTS

1▷ 19 AND 17 INCH DIMENSIONS OF PANEL AND CHASSIS SHALL BE CENTRALIZED WITHIN .020 INCHES AT ASSEMBLY.
SIDES OF CHASSIS LOCATED BY 17 INCH DIMENSION SHALL BE PARALLEL WITHIN .031 INCHES AND PERPENDICULAR TO REAR SURFACE OF FRONT PANEL WITHIN .062 INCHES.

2▷ CHARACTERS: FUTURA DEMIBOLD. CHARACTER HEIGHT $\frac{1}{8}$ INCH EXCEPT WHERE OTHERWISE SPECIFIED. SILK SCREEN PER ND 1002019 USING ENAMEL SEMI-GLOSS, INSTRUMENT BLACK, COLOR 514 OF ANA 157. (CENTRALIZE AS SHOWN.)

3▷ BORDER AREA, WITHIN $\frac{3}{16}$ INCH OF THE PANEL EDGE ON THE REAR SURFACE OF THE FRONT PANEL SHALL BE CO-PLANAR AND FREE OF PROTRUSIONS.

4▷ FRONT PANEL FINISH: APPLY FINISH P513 OF SPECIFICATION MIL-F-14072. PRIME AND FINISH COATS TO BE APPLIED TO FRONT AND EDGES ONLY. APPLY 2 COATS OF TT-E-529A CLASS B ENAMEL, SEMI-GLOSS, LIGHT GRAY, COLOR 26440 OF FED-STD 595.
NOTE - MIL-P-8585 PRIMER SUPERCEDES MIL-P-6889

6▷ PIN LIST FOR CONNECTOR MS3112E-22-21S (J3)

| INTERNAL CONNECTIONS | WIRE DESTINATION J1 (CONTROL, 1900072) |
|---|---|
| A | OPEN |
| B | B |
| C | C |
| D | D |
| E | E |
| F | F |
| G | G |
| H | H |
| J | J |
| K | K |
| L | L |
| M | M |
| N | N |
| P | P |
| R | R |
| S | S |
| T | T |
| U | U |
| V | OPEN |
| W | OPEN |
| X | OPEN |

7▷ PIN LIST FOR CONNECTOR MS3112E-20-41S (J1)

| INTERNAL CONNECTIONS | | WIRE DESTINATION FROM CONNECTOR | |
|---|---|---|---|
| A | | | OPEN |
| B | P801 +SIG. IN | B | A1J2 (AMPLIFIER 1900070) |
| C | P801 -SIG. IN | C | A1J2 (AMPLIFIER 1900070) |
| D | P801 FEEDBACK | D | A1J2 (AMPLIFIER 1900070) |
| E | | | OPEN |
| F | | | |
| G | | | |
| H | | | |
| J | | | |
| K | | | |
| L | | | |
| M | | | |
| N | | | |
| O | | | |
| P | | | |
| R | | | |
| S | | | |
| T | | | |
| U | | | |
| V | | | |
| W | | | OPEN |
| X | P802 +SIG. IN | B | A2J2 (AMPLIFIER 1900070) |
| Y | P802 -SIG. IN | C | A2J2 |
| Z | P802 FEEDBACK | D | A2J2 |
| a | P803 +SIG. IN | B | A3J2 |
| b | P803 -SIG. IN | C | A3J2 |
| c | P803 FEEDBACK | D | A3J2 1900070) |
| d | P808 +SIG. IN | B | A1J2 1900071) |
| e | P808 -SIG. IN | C | A1J2 |
| f | P808 FEEDBACK | D | A1J2 |
| g | P807 +SIG. IN | B | A2J2 |
| h | P807 -SIG. IN | C | A2J2 |
| i | P807 FEEDBACK | D | A2J2 |
| j | P805 +SIG. IN | B | A4J2 |
| k | P805 -SIG. IN | C | A4J2 1900071) |
| m | P804 +SIG. IN | B | A4J2 1900070) |
| n | P804 -SIG. IN | C | A4J2 1900070) |
| p | P804 FEEDBACK | D | A4J2 1900070) |
| q | P806 +SIG. IN | B | A3J2 1900071) |
| r | P806 -SIG. IN | C | A3J2 |
| s | P806 FEEDBACK | D | A3J2 |
| t | P805 FEEDBACK | D | A4J2 (AMPLIFIER 1900071) |

8▷ PIN LIST FOR CONNECTOR MS3112E-16-8P (J4)

| PIN LETTER | CONNECTION |
|---|---|
| A | CHASSIS GROUND |
| B | OPEN |
| C | OPEN |
| D | 115V 60CPS (HI) |
| E | 115V 60CPS (LO) |
| F | OPEN |
| G | OPEN |
| H | OPEN |

THE SUPPLIERS NAME, ADDRESS AND PART NUMBER SHALL BE PLACED ON THE OUTSIDE SURFACE OF THE REAR PLATE. THIS INFORMATION SHALL NOT APPEAR ON THE FRONT PANEL.

THE OSCILLOGRAPH AMPLIFIER P/N 1900070-011 OR-021, OSCILLOGRAPH AMPLIFIER P/N 1900071-011 OR-021, OSCILLOGRAPH CONTROL P/N 1900072-011, OSCILLOGRAPH P/N 1900073-011 AND PEN CONTROL ELECTRIC OSCILLOGPAPH P/N 1900165 SHALL BE ELECTRICALLY COMPATIBLE WITH EACH OTHER. THEN SHALL BE MATED AND THE FIVE DRAWERS TESTED AS ONE UNIT, EXCEPT AS SPECIFIED IN NOTE 16. THE UNIT SHALL PASS ALL THE TESTS CALLED OUT IN ND-1002205.

AUXILIARY ITEMS (IDENTIFIED BY MASSA PART NUMBER) TO BE SUPPLIED AS PART OF THIS ASSEMBLY:
1 DISPOSABLE INK CARTRIDGE, COLOR BLUE PER MODEL A-14040-501
1 INK-WRITING STYLI FOR USE WITH THE OSCILLOGRAPH (OS-600) 4 CM PEAK-TO-PEAK DEFLECTION MODEL 20756.
2 ROLLS OF INK CHART PAPER, 400 FEET, 4 CM SCALE GRADUATED IN MM DIVISIONS NO. 841 K SPECTOGRAPH GRAY.
1 AMPLIFIER PATCH CHORD CB-200.
1 FEOLA INK PUMP MODEL A-6132-1 OR EQUIVALENT
9 ELECTRIC STYLI (MODEL 20758)
2 ROLLS OF ELECTRIC CHART PAPER 250 FEET, 4 CM SCALE GRADUATED IN MM DIVISIONS NO. 842 E RED.

10▷ REQUIREMENTS FOR (MASSA P/N OS-600D) AND (MASSA P/N OS-610D) PEN MOTORS
THE PEN MOTORS SHALL HAVE A MINIMUM FREQUENCY RESPONSE, 0 TO 45 CPS WITHIN 3 DB FOR 40 MM PEAK-TO-PEAK DEFLECTION AND 45 TO 120 CPS WITHIN 3 DB FOR 10 MM PEAK-TO-PEAK DEFLECTION.
STEP RESPONSE 90% IN 5 MILLISECONDS OR LESS, WITH LESS THAN 4% OVERSHOOT.
THE DEVIATION FROM LINEARITY SHALL BE LESS THAN .4MM OVER THE 40 MM SCALE.
CURRENT SENSITIVITY: 28 MA PER MM
COIL RESISTANCE: 16 OHMS (DC)
EACH PEN MOTOR SHALL HAVE INDIVIDUAL ADJUSTMENTS FOR ALIGNMENT OF BOTH LATERAL AND LONGITUDINAL POSITION, AND INDIVIDUAL DAMPING POTENTIOMETERS WITH A RANGE OF 60% TO 110% OF CRITICAL DAMPING.
PEN MOTOR HYSTERESIS SHALL BE LESS THAN ONE QUARTER MM.
THE UNIT SHALL BE COMPATIBLE WITH DRIVER AMPLIFIER P/N 1900068-011, DC PREAMP P/N 1900074-011 AND PHASE SENSITIVE DEMODULATOR P/N 1901755-011
NATURAL FREQUENCY: 45 CPS

11▷ OS-610D PEN MOTOR ONLY
AN EVENT MARKER SHALL BE PROVIDED WHICH WILL AUTOMATICALLY PULSE EVERY SECOND WHEN THE MM PER SEC CHART SPEEDS ARE ENGAGED

12▷ PEN 20756 SAPPHIRE TIP, STANDARD FOR INK WRITING (4 CM DEFLECTION).

13▷ ALLOW $\frac{1}{2}$ INCH CLEARANCE BEHIND HOLES.

LATCHING MECHANISM INCLUDED AS PART OF FRONT PANEL HANDLES SHALL BE CAPABLE OF SECURING OSCILLOGRAPH TO CONSOLE WITH A $\frac{3}{16}$ INCH R.F.I. GASKET (COMPRESSES TO $\frac{1}{8}$ INCH) BETWEEN CONSOLE AND BACK OF FRONT PANEL.
CHARACTERS IN AREAS OTHER THAN THOSE ON FRONT PANEL SHALL BE $\frac{1}{8}{}^{+\frac{1}{16}}_{-0}$, LEGIBLY APPLIED PER ND 1002019.
INNER MEMBER OF CHASSIS TRACK SLIDE SHALL BE OF THE NON-TILTING TYPE.

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70323.

FRONT PANEL MATERIAL: ALUMINUM ALLOY 2024-T3 (QQ-A-355 TEMPER T-3) FINISH ON FRONT BEFORE PAINTING (AS ROLLED).

DATA SOURCE:
MASSA DIVISION
HINGHAM MASS
CD1200A (MODIFIED)

9▷ PIN LIST FOR CONNECTOR MS3112E-12-3S (J2)

| INTERNAL CONNECTIONS PIN LETTER | | DESTINATION (J4 OSCILLOGRAPH AMP 1900070) PIN LETTERS |
|---|---|---|
| A | OPEN | A |
| B | 115V 60 CPS LO | B |
| C | 115V 60 CPS HI | C |
| | | D |
| | | E |
| | | F |

14▷ PIN LIST FOR CONNECTOR MS3112E-14-19P (J5)

| INTERNAL CONNECTIONS J5 | WIRE DESTINATION — (PEN CONTROL ELECTRIC OSCILLOGRAPH P/N 1900165) J2 |
|---|---|
| A OPEN | |
| B | B |
| C | C |
| D | D |
| E | E |
| F OPEN | |
| G | |
| H | |
| J OPEN | |
| K | K |
| L | L |
| M | M |
| N | N |
| P | P |
| R OPEN | |
| S | |
| T OPEN | |
| U | U |
| V | V |

15▷ PIN LIST FOR CONNECTOR MS3112E-8-4S (J6)

| INTERNAL CONNECTIONS J6 | WIRE DESTINATION — (PEN CONTROL ELECTRIC OSCILLOGRAPH P/N 1900165) J1 |
|---|---|
| A OPEN | |
| B | B 115V 60~ HI |
| C | C 115V 60~ LO |
| D OPEN | |

16▷ WHEN THE OSCILLOGRAPH IS SOLD INDEPENDENTLY OF THE OSCILLOGRAPH AMPLIFIERS, CONTROL OSCILLOGRAPH, AND ELECTRIC PEN CONTROL IT SHALL PASS ONLY THE TESTS OF SECTION 4 OF THE PROCUREMENT SPECIFICATION PS 1900047.

17▷ ADJUST SLIDE POSITION BY ADDING SHIMS IF NECESSARY.

REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
|---|---|---|---|---|---|
| A | | ADDED ITEM IN LIST OF MATERIAL PER MXC 186915 | | 4 MAY 63 | WK |
| A1 | | CHANGE IN ACCORDANCE WITH MXC 186870 | | 20 JUN 63 | |
| B1 | | CHANGE IN ACCORDANCE WITH MXC 187895 | — | 15 JUL 63 | WM |
| C | | CHANGE IN ACCORDANCE WITH MXC 188535 | | 15 AUG 63 | CAM |
| D | | CHANGE IN ACCORDANCE WITH MXC 188571 | | 26 AUG 63 | CAM |
| E | | CHANGE IN ACCORDANCE WITH MXC 189023 | | 30 AUG 63 | JHH |
| F | E-8 | REM'D ▷ EXACT CONN LOC ON REAR OF ASSY SHALL BE DETERMINED BY SUP. PER MXC 192078 TDRR 08800 | | 20 NOV 63 | SH JEL |
| G | | REVISED PER TDRR 10205 | | 30 JAN 64 | |
| H | | REVISED PER TDRR 10208 | | 7 JUL 64 | |
| J | | CHANGE IN ACCORDANCE WITH ECM 304039 TDRR 14840 | | 27 OCT 64 | PHG |
| K | — | REPLACED WITH CHANGE BY REV L PER TDRR 8659 | — | 4 MAY 65 | |

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 209 DATE 8 May 65

Ⓚ REPLACED WITH CHANGE BY REV L

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900047-011 | 1900000 | |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

| FRACTIONS | DECIMALS | ANGLES |
|---|---|---|
| $+\frac{1}{64}$ | +.005 | +− |
| $-\frac{1}{64}$ | −.005 | −− |

DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Tomadus DATE 11 APR 63
CHECKED 23 APR 63
APPROVAL
APPROVAL 22 Apr 63
NASA APPROVAL 5/4/63
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

OSCILLOGRAPH

CODE IDENT NO
SIZE E
1900073
SCALE 1:2
SHEET 2 OF 2

1900073 K

REQUIREMENTS:

SIGNAL INPUT RANGE: 100 MV TO 200 VOLTS FULL SCALE DEFLECTION, WITH ±20 MM FROM CENTER ZERO.

SENSITIVITY: 5 MV PER MM TO 10 VOLTS PER MM

INPUT: DIFFERENTIAL

INPUT IMPEDANCE 1 MEGOHM MINIMUM

ISOLATION SIGNAL INPUTS, INPUT POWER AND CHASSIS SHALL BE ELECTRICALLY ISOLATED FROM EACH OTHER.

COMMON MODE REJECTION: GREATER THAN 40 DB, DC TO 100 CPS AT MAX GAIN.

COMMON MODE TOLERANCE: ±5 VOLTS DC TO 100 CPS.

BANDWIDTH: 3 DB MAX DOWN AT NOT LESS THAN 120 CPS.

STEP RESPONSE: 90% MIN IN 5 MILLISECONDS

DRIFT: LESS THAN 2 MV EQUIVALENT INPUT PER HOUR AT MAX GAIN.

POWER: 105 TO 125 V, 60 ± 5 CYCLES, 30 WATTS

CALIBRATION: .5 VOLT INTERNALLY REGULATED REFERENCE

FRONT PANEL CONTROLS: 9 STEP ATTENUATOR, VOLT PER MM-VOLT PER CM SWITCH, OPERATE-OFF-CALIBRATE SWITCH, ZERO ADJUST, CALIBRATION ADJUST, 60 CYCLE PRIME BUTTON, DC BALANCE

THE DC PREAMPLIFIER PR-200 (MODIFIED) P/N 1900074 SHALL BE ELECTRICALLY AND MECHANICALLY COMPATIBLE FOR USE WITH THE DRIVER AMPLIFIER DA-101A (MODIFIED) P/N 1900069 AND THE RACK, OSCILLOGRAPH P/N 1900067

1▷ FRONT PANEL FINISH: APPLY FINISH P513 OF SPECIFICATION MIL-F-4072 PRIME AND FINISH COATS TO BE APPLIED TO PANEL FRONT AND EDGES ONLY. APPLY 2 COATS OF TT-E-529A CLASS B ENAMEL, SEMI-GLOSS, LIGHT GRAY, COLOR 26440 OF FED STD 595.
NOTE: MIL-P-8585 PRIMER SUPERSEDES MIL-P-6889.

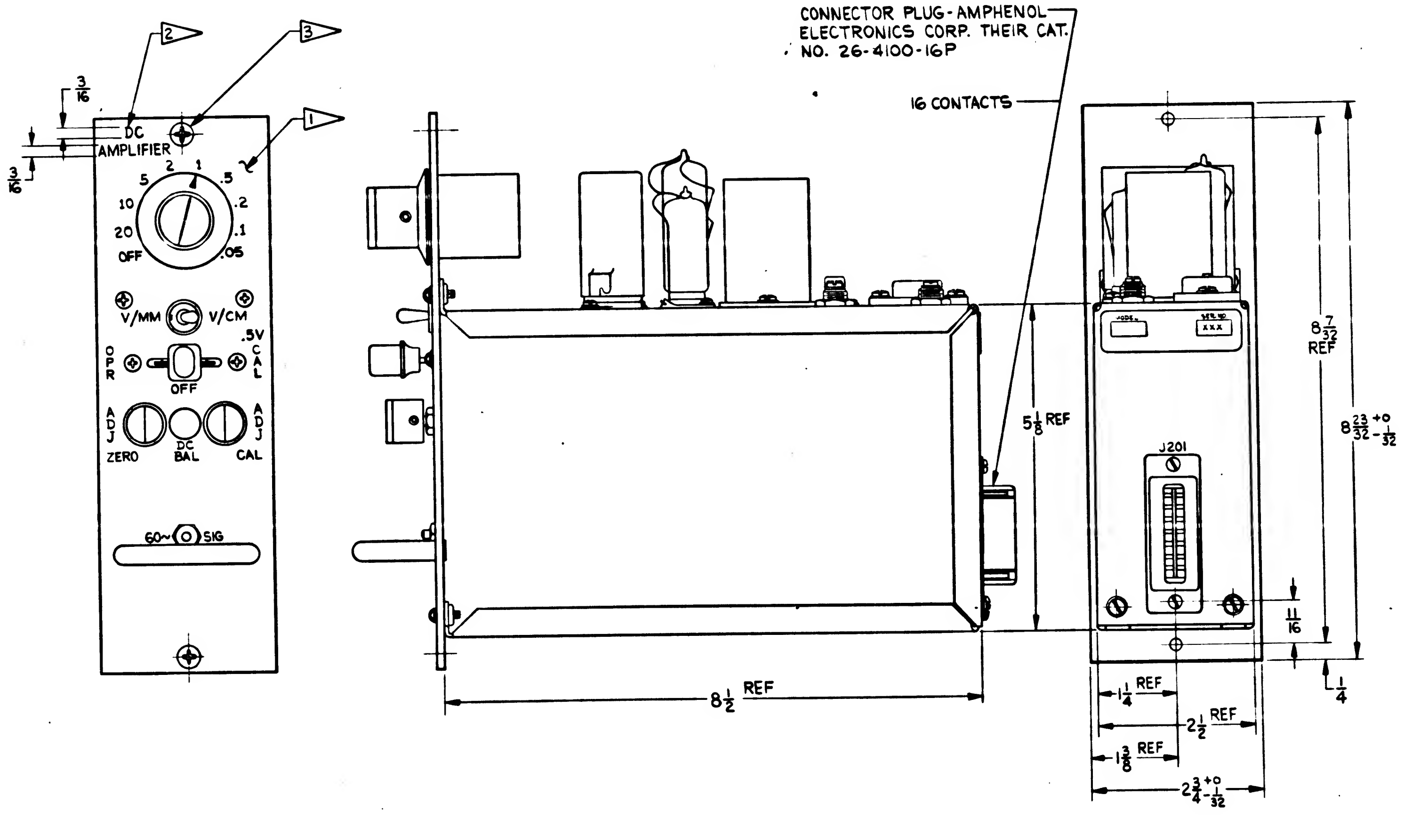
2▷ FRONT PANEL CHARACTERS (FUTURA DEMIBOLD): CHARACTER HEIGHT $\frac{1}{8}$ INCH EXCEPT WHERE OTHERWISE SPECIFIED. SILK SCREEN PER ND 1002019 USING ENAMEL SEMI-GLOSS INSTRUMENT BLACK, COLOR 514 OF ANA 157. CENTRALIZE AS SHOWN.

CHARACTER HEIGHT ELSEWHERE ON THE UNIT SHALL BE $\frac{1}{8}{}^{+\frac{1}{16}}_{-0}$ LETTERING SHALL BE LEGIBLY APPLIED BY ANY SUITABLE MEANS.

THE REAR SURFACE OF THE FRONT PLANEL SHALL BE PROTECTED FROM CORROSION BY CADMIUM PLATE PER QQ-P-416.

THE UNIT SHALL BE DESIGNED TO MEET THE ENVIRONMENTAL REQUIREMENTS OF ND

3▷ FINGER OPERATED CAPTIVATED FASTENERS SHALL BE INSTALLED AS PART OF EACH PREAMPLIFIER. FASTENERS SHALL ALSO BE PROVIDED WITH A CROSS RECESSED SLOT.



**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01209 DATE 9 May 63

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| A2 | | [illegible] LIST OF MATERIAL | | MAY 63 | |

DATA SOURCE
MASSA DIVISION
HINGHAM, MASS.
MODEL PR200

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | 2 | TEA | FASTENER, CAPTIVATED |
| | | | | | 1 | TEA | PREAMPLIFIER, DC, MODEL PR-200 |
| | | | 011 | EFFECTIVITY | ITEM NO | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| QUANTITY REQUIRED | | | | | LIST OF PARTS AND MATERIALS | | |

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900070-01 | 1900004 | 011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

| FRACTIONS | DECIMALS | ANGLES |
|---|---|---|
| $+\frac{1}{64}$ | +.005 | +− |
| $-\frac{1}{64}$ | −.005 | −− |

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN E. Tompkins DATE 2 APR 63
CHECKED 23 APR 63
APPROVAL Apr 23, 1963
APPROVAL 23 APR 63
NASA APPROVAL 5/1/63
MIT APPROVAL 5/1/63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

PREAMPLIFIER DC

CODE IDENT NO
SIZE E
1900074
SCALE
SHEET

1900074

"REQUIREMENTS WHEN USED WITH 1900069, 1900070 & 1900073"
SIGNAL INPUT RANGE: 100 MV TO 200 VOLTS FULL SCALE DEFLECTION, WITH ± 20 MM FROM CENTER ZERO.
SENSITIVITY: 5 MV PER MM TO 10 VOLTS PER MM
INPUT: DIFFERENTIAL
INPUT IMPEDANCE 10 MEGOHM MINIMUM

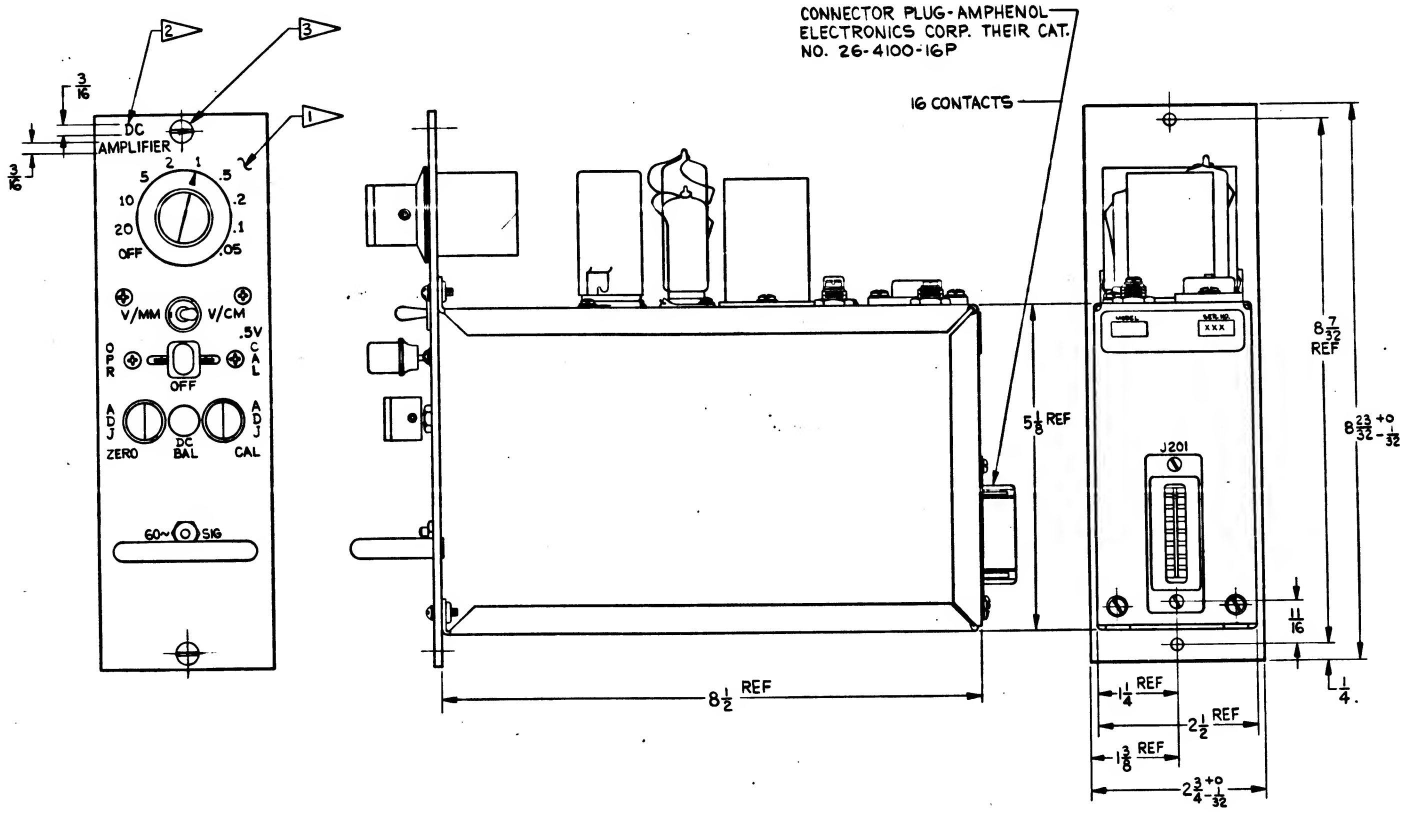
COMMON MODE REJECTION: GREATER THAN 40 DB, DC TO 100 CPS AT MAX GAIN.
COMMON MODE TOLERANCE: ±5 VOLTS DC TO 100 CPS.
BANDWITH: 3 DB MAX DOWN AT NOT LESS THAN 120 CPS.
STEP RESPONSE: 90% MIN IN 5 MILLISECONDS
DRIFT: LESS THAN 2 MV EQUIVALENT INPUT PER HOUR AT MAX GAIN.

CALIBRATION: .5 VOLT INTERNALLY REGULATED REFERENCE
FRONT PANEL CONTROLS: 9-STEP ATTENUATOR, VOLT PER MM-VOLT PER CM SWITCH, OPERATE-OFF-CALIBRATE SWITCH, ZERO ADJUST, CALIBRATION ADJUST, 60 CYCLE PRIME BUTTOM, DC BALANCE
THE DC PREAMPLIFIER PR-200 (MODIFIED) P/N 1900074 SHALL BE ELECTRICALLY AND MECHANICALLY COMPATIBLE FOR USE WITH THE DRIVER AMPLIFIER DA-101A (MODIFIED) P/N 1900069 AND THE RACK, OSCILLOGRAPH P/N 1900067

1 ▷ FRONT PANEL FINISH: APPLY FINISH P513 OF SPECIFICATION MIL-F-14072, PRIME AND FINISH COATS TO BE APPLIED TO PANEL FRONT AND EDGES ONLY. APPLY 2 COATS OF TT-E-529A CLASS B ENAMEL, SEMI-GLOSS, LIGHT GRAY, COLOR 26440 OF FED STD 595.
NOTE: MIL-P-8585 PRIMER SUPERSEDES MIL-P-6889.

2 ▷ FRONT PANEL CHARACTERS (FUTURA DEMIBOLD): CHARACTER HEIGHT $\frac{1}{8}$ INCH EXCEPT WHERE OTHERWISE SPECIFIED. SILK SCREEN PER ND 1002019 USING ENAMEL SEMI-GLOSS INSTRUMENT BLACK, COLOR 514 OF ANA 157. CENTRALIZE AS SHOWN.
CHARACTER HEIGHT ELSEWHERE ON THE UNIT SHALL BE $\frac{1}{8}{}^{+\frac{1}{16}}_{-0}$ LETTERING SHALL BE LEGIBLY APPLIED BY ANY SUITABLE MEANS.
THE REAR SURFACE OF THE FRONT PLANEL SHALL BE PROTECTED FROM CORROSION BY CADMIUM PLATE PER QQ-P-416.

3 ▷ FINGER OPERATED CAPTIVATED FASTENERS SHALL BE INSTALLED AS PART OF EACH PREAMPLIFIER. FASTENERS SHALL BE PROVIDED WITH A SLOT.



(M)

REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD |
|---|---|---|---|---|---|
| A | | NOTE 3 WAS "...WITH A "CROSS" SLOT FOR USE A PHILLIPS SCREW-DRIVER. 2) ADDED [illegible] AND 2 IN LIST OF MATERIAL. PER MXC 186916 | | 7 MAY 63 | WK |
| A1 | | CHANGE IN ACCORDANCE WITH MXC 186686 | | JUN 63 | ARS |
| B | | CHANGE IN ACCORDANCE WITH MXC 187701 PER TDRR 23721 | | 1 JUL 63 | |

**FOR INFORMATION ONLY**
CLASS B RELEASE TDR No. 01209 DATE 8 May 63

DATA SOURCE
MASSA DIVISION
HINGHAM, MASS.
MODEL PR200

| QUANTITY REQUIRED | | | | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | 011 | | | | |
| | | | | | 2 | TBA | FASTNER, CAPTIVATED |
| | | | | | 1 | TBA | PREAMPLIFIER, DC MODEL [illegible] |

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900071-011 | | |
| 1900070-011 | 1900060 | 011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

| FRACTIONS | DECIMALS | ANGLES |
|---|---|---|
| $+\frac{1}{64}$ | +.005 | +– |
| $-\frac{1}{64}$ | –.005 | –– |

DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Tampen DATE 12 APR 63
CHECKED 23 APR 63
APPROVAL Apr 23 1963
APPROVAL 23 Apr 63
NASA APPROVAL 5/14/63
MIT APPROVAL 5/10/63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

PREAMPLIFIER DC

CODE IDENT NO
SIZE E
1900074
SCALE 1:1
SHEET

1900074

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

REQUIREMENTS WHEN USED WITH 1900069-011, 1900070-011, 1900073-011.
SIGNAL INPUT RANGE: 100 MV TO 200 VOLTS FULL SCALE DEFLECTION, WITH ±20MM FROM CENTER ZERO.
SENSITIVITY: 5 MV PER MM TO 10 VOLTS PER MM
INPUT: DIFFERENTIAL
INPUT IMPEDANCE 10 MEGOHM MINIMUM

COMMON MODE REJECTION: GREATER THAN 40 DB, DC TO 100 CPS AT MAX GAIN.
COMMON MODE TOLERANCE: ±5 VOLTS DC TO 100 CPS.
BANDWITH: 3 DB MAX DOWN AT NOT LESS THAN 120 CPS.
STEP RESPONSE: 90% MIN IN 5 MILLISECONDS
DRIFT: LESS THAN 2 MV EQUIVALENT INPUT PER HOUR AT MAX GAIN.

CALIBRATION: .5 VOLT INTERNALLY REGULATED REFERENCE
FRONT PANEL CONTROLS: 9 STEP ATTENUATOR, VOLT PER MM-VOLT PER CM SWITCH, OPERATE-OFF-CALIBRATE SWITCH, ZERO ADJUST, CALIBRATION ADJUST, 60 CYCLE PRIME BUTTOM, DC BALANCE
THE DC PREAMPLIFIER PR-200 (MODIFIED) P/N 1900074-011 SHALL BE ELECTRICALLY AND MECHANICALLY COMPATIBLE FOR USE WITH THE DRIVER AMPLIFIER DA-101A (MODIFIED) P/N 1900069-011 AND THE RACK, OSCILLOGRAPH P/N 1900067-011

1▷ FRONT PANEL FINISH: APPLY FINISH P513 OF SPECIFICATION MIL-F-4072, PRIME AND FINISH COATS TO BE APPLIED TO PANEL FRONT AND EDGES ONLY. APPLY 2 COATS OF TT-E-529 CLASS B ENAMEL, SEMI-GLOSS, LIGHT GRAY, COLOR 26440 OF FED STD 595.
NOTE: MIL-P-8585 PRIMER SUPERSEDES MIL-P-6889.

2▷ FRONT PANEL CHARACTERS (PER ND-1002122): CHARACTER HEIGHT $\frac{1}{8}$ INCH EXCEPT WHERE OTHERWISE SPECIFIED. SILK SCREEN PER ND 1002019 USING ENAMEL SEMI-GLOSS INSTRUMENT BLACK, COLOR 514 OF ANA 157. CENTRALIZE AS SHOWN.
CHARACTER HEIGHT ELSEWHERE ON THE UNIT SHALL BE $\frac{1}{8}{}^{+\frac{1}{16}}_{-0}$ LETTERING SHALL BE LEGIBLY APPLIED PER ND1002019

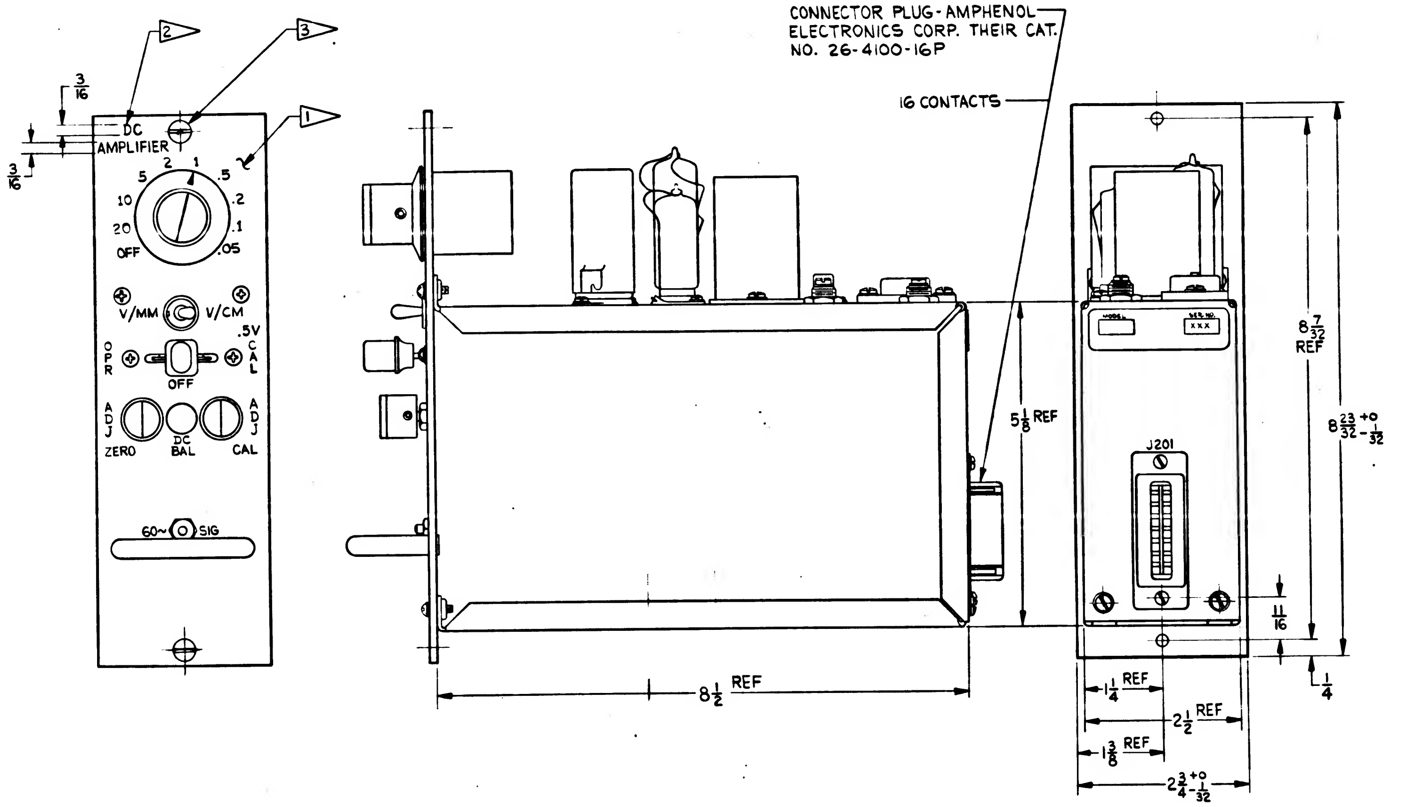
INTERPRET DRAWING IN ACCORDANCE WITH THE STANDARDS PRESCRIBED BY MIL-D-70327.

3▷ FINGER OPERATED CAPTIVATED FASTENERS SHALL BE INSTALLED AS PART OF EACH PREAMPLIFIER. FASTENERS SHALL BE PROVIDED WITH A SLOT.

4▷ WHEN THIS PREAMPLIFIER IS SOLD INDEPENDENTLY FROM ITS HIGHER ASSEMBLY, IT SHALL PASS ALL OF THE TESTS CALLED OUT IN THE PROCUREMENT SPECIFICATION. THE COMPLETE SPECIFICATION APPLIES ONLY WHEN THE AMPLIFIER IS SOLD INDEPENDENTLY FROM A HIGHER ASSEMBLY AND IS SOLD TO A GOVERNMENT AGENCY.

REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
|---|---|---|---|---|---|
| A | | NOTE 1▷ WAS "...WITH CROSS SLOT FOR USE A PHILLIPS SCREW-DRIVER. (2) ADDED [illegible] AND [illegible] IN LIST OF MATERIAL. PER MXC 186916 | | 7 MAY 63 | [illegible] |
| A1 | | CHANGE IN ACCORDANCE WITH MXC 186686 | | [illegible] JUN 63 | [illegible] ARS |
| B | | CHANGE IN ACCORDANCE WITH MXC 187701 PER TDRR 03721 | | JUL 63 | [illegible] |
| C | | CHANGE IN ACCORDANCE WITH CM 197469<br>REVISED PER TDR 10204 | | 11 MAY 64 | GG |



**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01209 DATE 8 May 63

DATA SOURCE
VASSA DIVISION
HAG-AM, VASS.
MODEL PR 200

SEE NOTE 4▷

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | X | | 3 | PS-1900074 | PROCUREMENT SPEC. |
| | | | | | 2 | TBA | FASTNER, CAPTIVATED |
| | | | | | 1 | TBA | PREAMPLIFIER, DC MODEL PR200/S1) |
| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| QUANTITY REQUIRED | | | | | LIST OF PARTS AND MATERIALS | | |

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900071-011 | | |
| 1900073-011 | 1900090 | 011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

| FRACTIONS | DECIMALS | ANGLES |
|---|---|---|
| $+\frac{1}{64}$ | +.005 | +– |
| $-\frac{1}{64}$ | –.005 | –– |

DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN C. Tamsen DATE 12 APR 63
CHECKED [illegible] 23 APR 63
APPROVAL R. Rahn Apr 23 1963
APPROVAL [illegible] 23 APR 63
NASA APPROVAL [illegible] 5/9/63
MIT APPROVAL [illegible] 5/9/63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

PREAMPLIFIER, DC

CODE IDENT NO.
SIZE E
1900074
SCALE 1:1
SHEET

1900074 C

| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
|---|---|---|---|---|---|
| A | | [illegible] ERIAL. PER MXC 86916 | | 7 MAY 63 | |
| F1 | | CHANGE IN ACCORDANCE WITH MXC 86686 | — | JUN 63 | ARS |
| B | | CHANGE IN ACCORDANCE WITH MXC 87701 PER TDRR [illegible] | | JUL 63 | |
| C | | CHANGE IN ACCORDANCE WITH CN 197469<br>REVISED PER TDR 10204 | | MAY 66 | RR GG |
| D | | REPLACED WITH CHANGE BY REV. E PER TDRR 20385 | | 3 [illegible] 65 | |

REQUIREMENTS WHEN USED WITH 1900069-011, 1900070-011, 1900073-011.
SIGNAL INPUT RANGE: 100 MV TO 200 VOLTS FULL SCALE DEFLECTION, WITH ± 20 MM FROM CENTER ZERO.
SENSITIVITY: 5 MV PER MM TO 10 VOLTS PER MM
INPUT: DIFFERENTIAL
INPUT IMPEDANCE 10 MEGOHM MINIMUM

COMMON MODE REJECTION: GREATER THAN 40 DB, DC TO 60 CPS AT MAX GAIN.
COMMON MODE TOLERANCE: ±5 VOLTS DC TO 100 CPS.
BANDWITH: 3 DB MAX DOWN AT NOT LESS THAN 120 CPS.
STEP RESPONSE: 90% MIN IN 5 MILLISECONDS
DRIFT: LESS THAN 2 MV EQUIVALENT INPUT PER HOUR AT MAX GAIN.

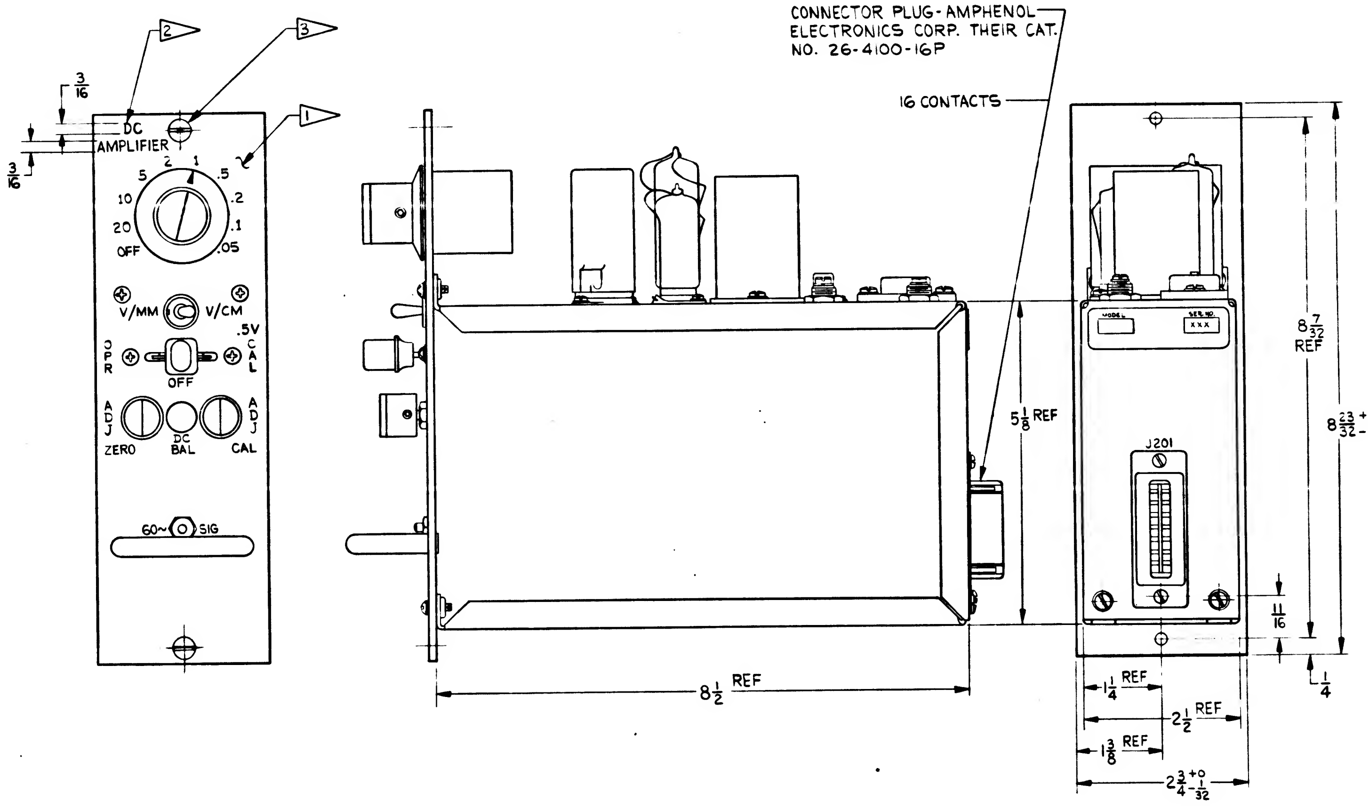
CALIBRATION: .5 VOLT INTERNALLY REGULATED REFERENCE
FRONT PANEL CONTROLS: 9 STEP ATTENUATOR, VOLT PER MM-VOLT PER CM SWITCH, OPERATE-OFF-CALIBRATE SWITCH, ZERO ADJUST, CALIBRATION ADJUST, 60 CYCLE PRIME BUTTOM, DC BALANCE
THE DC PREAMPLIFIER PR-200 (MODIFIED) P/N 1900074-011 SHALL BE ELECTRICALLY AND MECHANICALLY COMPATIBLE FOR USE WITH THE DRIVER AMPLIFIER DA-101A (MODIFIED) P/N 1900069-011 AND THE RACK, OSCILLOGRAPH P/N 1900067-011

1▷ FRONT PANEL FINISH: APPLY FINISH P513 OF SPECIFICATION MIL-F-4072 PRIME AND FINISH COATS TO BE APPLIED TO PANEL FRONT AND EDGES ONLY. APPLY 2 COATS OF TT-E-529 CLASS B ENAMEL, SEMI-GLOSS, LIGHT GRAY, COLOR 26440 OF FED STD 595.
NOTE: MIL-P-8585 PRIMER SUPERSEDES MIL-P-6889.

2▷ FRONT PANEL CHARACTERS (PER ND-1002122): CHARACTER HEIGHT $\frac{1}{8}$ INCH EXCEPT WHERE OTHERWISE SPECIFIED. SILK SCREEN PER ND 1002019 USING ENAMEL SEMI-GLOSS INSTRUMENT BLACK, COLOR 514 OF ANA 157. CENTRALIZE AS SHOWN.
CHARACTER HEIGHT ELSEWHERE ON THE UNIT SHALL BE $\frac{1}{8}{}^{+\frac{1}{16}}_{-0}$ LETTERING SHALL BE LEGIBLY APPLIED PER ND1002019
INTERPRET DRAWING IN ACCORDANCE WITH THE STANDARDS PRESCRIBED BY MIL-D-70327.

3▷ FINGER OPERATED CAPTIVATED FASTENERS SHALL BE INSTALLED AS PART OF EACH PREAMPLIFIER. FASTENERS SHALL BE PROVIDED WITH A SLOT.

4▷ WHEN THIS PREAMPLIFIER IS SOLD INDEPENDENTLY FROM ITS HIGHER ASSEMBLY, IT SHALL PASS ALL OF THE TESTS CALLED OUT IN THE PROCUREMENT SPECIFICATION. THE COMPLETE SPECIFICATION APPLIES ONLY WHEN THE AMPLIFIER IS SOLD INDEPENDENTLY FROM A HIGHER ASSEMBLY AND IS SOLD TO A GOVERNMENT AGENCY.



FOR INFORMATION ONLY
CLASS B RELEASE TDR No. 01209 DATE 8 May 63

Ⓓ REPLACED WITH CHANGE BY REV Ⓔ

SEE NOTE 4▷

| | | | 011 | EFFECTIVITY | ITEM NO | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | X | | 3 | PS-1900074 | PROCUREMENT SPEC. |
| | | | | | 2 | TBA | FASTNER, CAPTIVATED |
| | | | | | 1 | TBA | PREAMPLIFIER, [illegible] MODEL "PR200" [illegible] |
| QUANTITY REQUIRED | | | | | LIST OF PARTS AND MATERIALS | | |

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900071-011 | | |
| 1900073-011 | [illegible] | 011 |
| APPLICATION | | |

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON
FRACTIONS $\pm\frac{1}{64}$ DECIMALS $\pm.005$ ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE WISCONSIN
ACSP PN
DRAWN C. Tamsen DATE 12 APR 63
CHECKED 23 APR 63
APPROVAL Apr 23 '63
APPROVAL 23 APR 63
NASA APPROVAL 5/1/63
MIT APPROVAL 5/6/63

MANNED SPACECRAFT CENTER
HOUSTON TEXAS

PREAMPLIFER DC

CODE IDENT NO
SIZE E
1900074
SCALE 1:1
SHEET

DATA SOURCE
MASSA DIVISION
HINGHAM, MASS.
MODEL PR200

1900074 D

1900075 B

## REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD |
|---|---|---|---|---|---|
| A | | REMOVED THERMAL RELAY :REQ P/N 1015833-009. | DO 5.470 | 22 APR 63 | WET |
| B | | ADDED 1900004 TO APPLICATION BLOCK. | | 7 MAY 63 | |

PICTURE INCOMPLETE

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01213 DATE 8 May 63

| QUANTITY REQUIRED | | | | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | 011 | | | | |
| | | | 4 | | | AN340-C4 | NUT-HEX |
| | | | 4 | | | 1015799-010 | NUT-PRESS, FLOATING |
| | | | 12 | | | 1015799-008 | NUT-PRESS, FLOATING |
| | | | 4 | | | AN960-C4 | WASHER-FLAT |
| | | | 6 | | | MS35338-79 | WASHER-LOCK |
| | | | 4 | | | MS35338-78 | WASHER-LOCK |
| | | | 4 | | | MS35217-55 | SCREW-PAN HEAD |
| | | | 12 | | | MS35216-41 | SCREW-PAN HEAD |
| | | | 6 | | | 1006783-21 | SCREW-BUTTON HEAD |
| | | | 4 | | | 1006783-20 | SCREW-BUTTON HEAD |
| | | | 1 | | | MS35489-14 | GROMMET |
| | | | 1 | | | | GASKET |
| | | | 1 | | | 1015805-001 | CIRCUIT BREAKER |
| | | | 4 | | | 1015823 | FILTER-RFI |
| | | | 1 | | | 1015822 | FILTER-RFI, |
| | | | | | | | |
| | | | 1 | | | 1015804-001 | RELAY-ARMATURE |
| | | | 1 | | | MS24141-02 | RELAY-POWER |
| | | | 1 | | | MS3122E-20-16S | CONNECTOR-RECEPTACLE, ELEC |
| | | | 1 | | | MS3102E-28-22S | CONNECTOR-RECEPTACLE, ELEC |
| | | | 1 | | | MS3102E-22-22P | CONNECTOR-RECEPTACLE, ELEC |

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900004 | 1900004 | 011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — − — DECIMALS + — − — ANGLES + — − —

DO NOT SCALE THIS DRAWING

MATERIAL ——

CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN A.J.Fiuder DATE 12-APR-63
5 APR 63
CHECKED 12 APR 63
APPROVAL
APPROVAL 15 APR 63
NASA APPROVAL 5/8/63
Lester Goldman 5/8/63
MIT APPROVAL 8 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

CIRCUIT BREAKER-FILTER ASSEMBLY

CODE IDENT NO.
SIZE D
1900075
SCALE ——
SHEET

MIL 10780-F

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

D 1900075

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
| A | | REMOVED THERMAL RELAY 1-REQ P/N 1015833-009. | DO 51476 | 22 APR 63 | WET |
| (M) B | | ADDED 1900004 TO APPLICATION BLOCK. | | 7 MAY 63 | |
| B1 | | TITLE WAS, "CIRCUIT BREAKER-FILTER ASSEMBLY." REMOVED P/N'S 1-MS3102E-28-22S, 1-MS3122E-20-16S & ASSOC. DESCRIPTIONS. ADDED P/N'S 2-MS3102E-24-11S, 1-MS3102E-18-18, 8-1015902-49, 5-1015902-50, 1-1015902-3, 6-1015902-15, 15-1015902-16 & ASSOC DESCRIPTIONS. | MXC-186519 | 20 MAY 63 | JHH |
| B2 | | 1. ITEM NO. 3 WAS 2-MS-3102E-24-11S CONNECTOR-RECEPTACLE, ELEC. 2. ADDED ITEM NO. 26 3. ADDED ITEM NOS. | MXC 186926 | 3 JUN 63 | JEL |
| C | | (1) REPLACED WITH CHANGE BY REV D TDRR 01798 | MXC 187321 | 18 JUNE -63 | M.G. J.E.G. |

PICTURE INCOMPLETE

Ⓒ REPLACED WITH CHANGE BY REV D

## FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 01213 DATE 8 May 63

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | 2 | | 26 | MS-3102E-32-6S | CONNECTOR-RECEPTACLE, ELEC |
| | | | 5 | | 25 | 1015902-50 | TERMINAL LUG |
| | | | 1 | | 24 | 1015902-3 | TERMINAL LUG |
| | | | 6 | | 23 | 1015902-15 | TERMINAL LUG |
| | | | 15 | | 22 | 1015902-16 | TERMINAL LUG |
| | | | 4 | | 21 | AN340-C4 | NUT-HEX |
| | | | 4 | | 20 | 1015799-010 | NUT-PRESS, FLOATING |
| | | | 12 | | 19 | 1015799-008 | NUT-PRESS, FLOATING |
| | | | 4 | | 18 | AN960-C4 | WASHER-FLAT |
| | | | 6 | | 17 | MS35338-79 | WASHER-LOCK |
| | | | 4 | | 16 | MS35338-78 | WASHER-LOCK |
| | | | 4 | | 15 | MS35217-55 | SCREW-PAN HEAD |
| | | | 12 | | 14 | MS35216-41 | SCREW-PAN HEAD |
| | | | 6 | | 13 | 1006783-21 | SCREW-BUTTON HEAD |
| | | | 4 | | 12 | 1006783-20 | SCREW-BUTTON HEAD |
| | | | 1 | | 11 | MS35489-14 | GROMMET |
| | | | 1 | | 10 | | GASKET |
| | | | 1 | | 9 | 1015805-001 | CIRCUIT BREAKER |
| | | | 4 | | 8 | 1015823 | FILTER-RFI |
| | | | 1 | | 7 | 1015822 | FILTER-RFI, |
| | | | 8 | | 6 | 1015902-49 | TERMINAL LUG |
| | | | 1 | | 5 | 1015804-001 | RELAY-ARMATURE |
| | | | 1 | | 4 | MS24141-D2 | RELAY-POWER |
| | | | | | 3 | | |
| | | | 1 | | 2 | MS3102E-18-19 | CONNECTOR-RECEPTACLE, ELEC |
| | | | 1 | | 1 | MS3102E-22-22P | CONNECTOR-RECEPTACLE, ELEC |
| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| QUANTITY REQUIRED | | | | | LIST OF PARTS AND MATERIALS | | |

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900004 | 1900004 | 011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± — ± — ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN A.J. Fiugee DATE 12-APR-63
Walt Kanstin 15 APR 63
CHECKED 15 APR 63
APPROVAL
APPROVAL 15 APR 63
NASA APPROVAL 5/8/63
Lester Goldyman 5/8/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

PANEL, PROTECTION,
AC POWER

CODE IDENT NO.
SIZE D
1900075
SCALE —
SHEET

MIL 10780—F

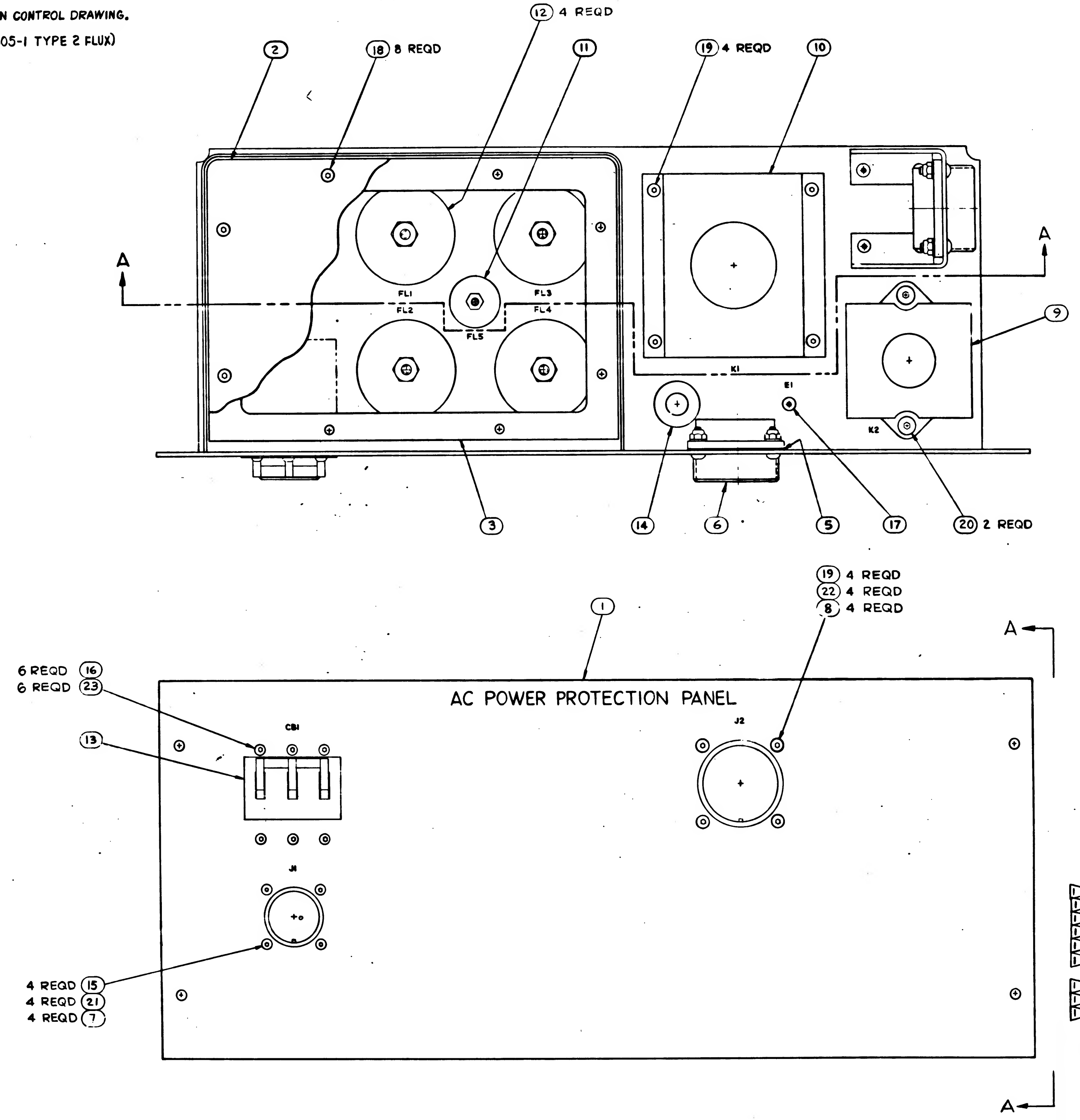
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD |
| D | | (1) REPLACES REVISION C WITH CHANGE.<br>(2) CHANGED NO. OF SHEETS FROM 1 TO 2.<br>REVISION STATUS CHANGED | NYC-18732 | 8-JUNE-63 | |

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

▷ VENDOR ITEM- SEE SPECIFICATION CONTROL DRAWING.

SOLDER PER MIL-S-6872 (ES-2505-1 TYPE 2 FLUX) USING ITEMS ㉔ & ㉕.



| D | D |
|---|---|
| SHEET 1 | SHEET 2 |
| REVISION STATUS OF SHEETS | |

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. D1213 DATE 8 May 63 originally

REPLACES REVISION C *WITH CHANGE*

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | AR | | 25 | AR | FLUX |
| | | | AR | | 24 | SN60 | SOLDER |
| | | | 6 | | 23 | MS35338-79 | WASHER, LOCK |
| | | | 8 | | 22 | AN363C832 | NUT, SELF-LOCKING |
| | | | 8 | | 21 | MS20365-440 | NUT, SELF-LOCKING |
| ▷ | | | 2 | | 20 | 1006783-57 | SCREW-BUTTON HD |
| ▷ | | | 12 | | 19 | 1006783-28 | SCREW-BUTTON HD |
| ▷ | | | 15 | | 18 | 1006783-27 | SCREW-BUTTON HD |
| ▷ | | | 1 | | 17 | 1006783-26 | SCREW-BUTTON HD |
| ▷ | | | 6 | | 16 | 1006783-22 | SCREW-BUTTON HD |
| ▷ | | | 8 | | 15 | 1006783-20 | SCREW-BUTTON HD |
| | | | 1 | | 14 | MS35489-43 | GROMMET |
| ▷ | | | 1 | | 13 | 1015805-001 | CIRCUIT BREAKER |
| ▷ | | | 4 | | 12 | 1015823 | FILTER, RADIO INTERFERENCE |
| ▷ | | | 1 | | 11 | 1015822 | FILTER, RADIO INTERFERENCE |
| | | | 1 | | 10 | 1015804-001 | RELAY, ARMATURE |
| | | | 1 | | 9 | MS24141-D2 | RELAY, ARMATURE |
| | | | 8 | | 8 | AN960C8 | WASHER, FLAT |
| | | | 8 | | 7 | AN960C4 | WASHER, FLAT |
| | | | 1 | | 6 | 1900174 | WIRING HARNESS, A |
| | | | 1 | | 5 | 1900173 | GASKET, CONNECTOR |
| | | | 1 | | 4 | 1900172 | BRACKET, CONNECTOR |
| | | | 1 | | 3 | 1900171 | GASKET, FRAME |
| | | | 1 | | 2 | 1900170 | COVER, CHASSIS |
| | | | 1 | | 1 | 1900167 | CHASSIS (INSEPARABLE) ASSY |
| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| QUANTITY REQUIRED | | | | | LIST OF PARTS AND MATERIALS | | |

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900004 | 1900004 | -011 |
| APPLICATION | | |

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — — —
DECIMALS + — — —
ANGLES + — — —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN A.J. FLUDER DATE [illegible]
CHECKED KOHSLER 15 APR 63
APPROVAL GIBBONS 15 APR 63
APPROVAL [illegible]
NASA APPROVAL 7/2/63
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

AC POWER PROTECTION
PANEL ASSEMBLY

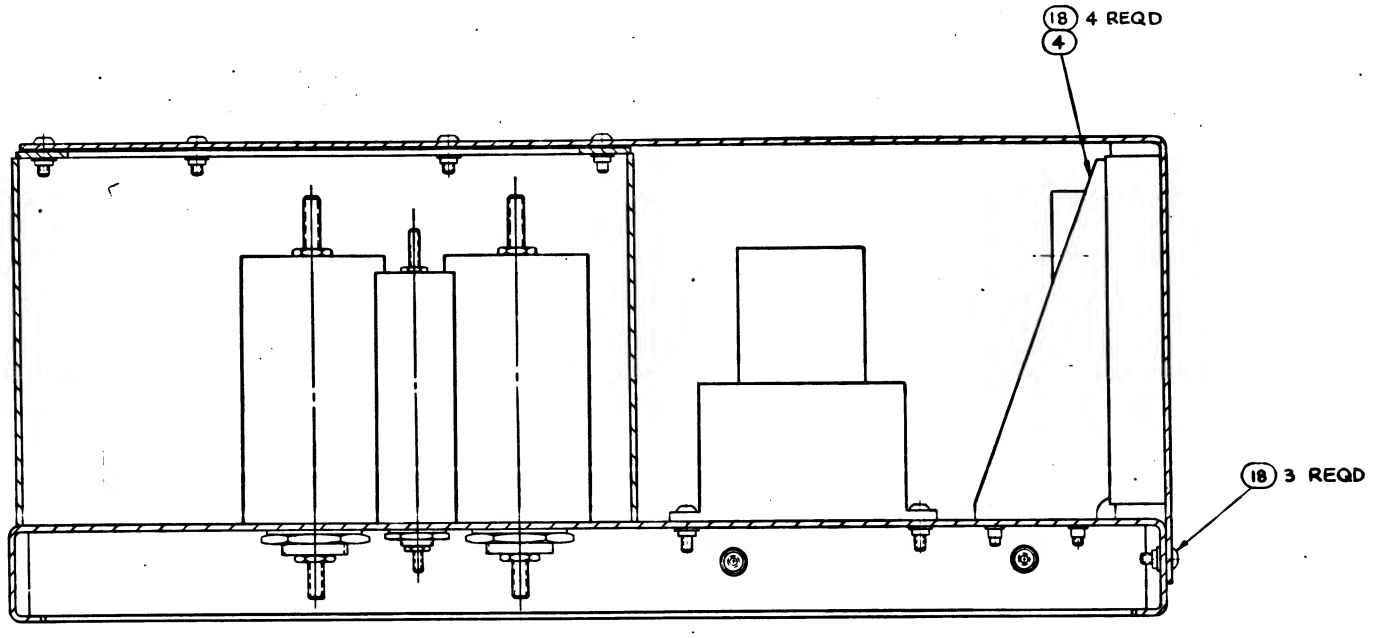
CODE IDENT NO.
SIZE E
1900075
SCALE FULL
SHEET 1 OF 2

1900075 D

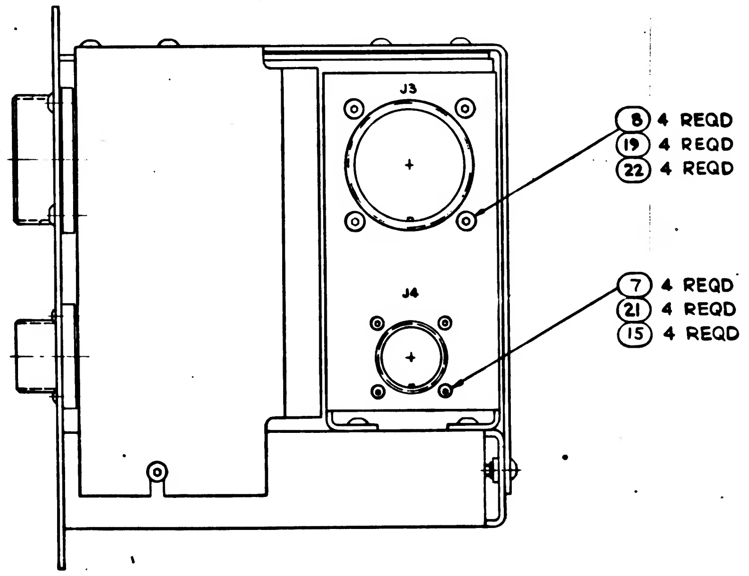
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

**REVISIONS**

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD |
|---|---|---|---|---|---|
| D |  | (1) THIS SHEET ADDED<br>TDR [illegible] | [illegible] | [illegible] 63 | [illegible] |



SECTION A-A



VIEW A-A

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. D-90 DATE 2 July 63

Ⓓ THIS SHEET ADDED

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

| FRACTIONS | DECIMALS | ANGLES |
|---|---|---|
| + — | + — | + — |
| — — | — — | — — |

DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN A.J. FLUDER DATE 12-MAR-63
CHECKED KONSLER 15-MAR-63
APPROVAL GIBBONS 15-MAR-63
APPROVAL [illegible]
NASA APPROVAL 7/1/63
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

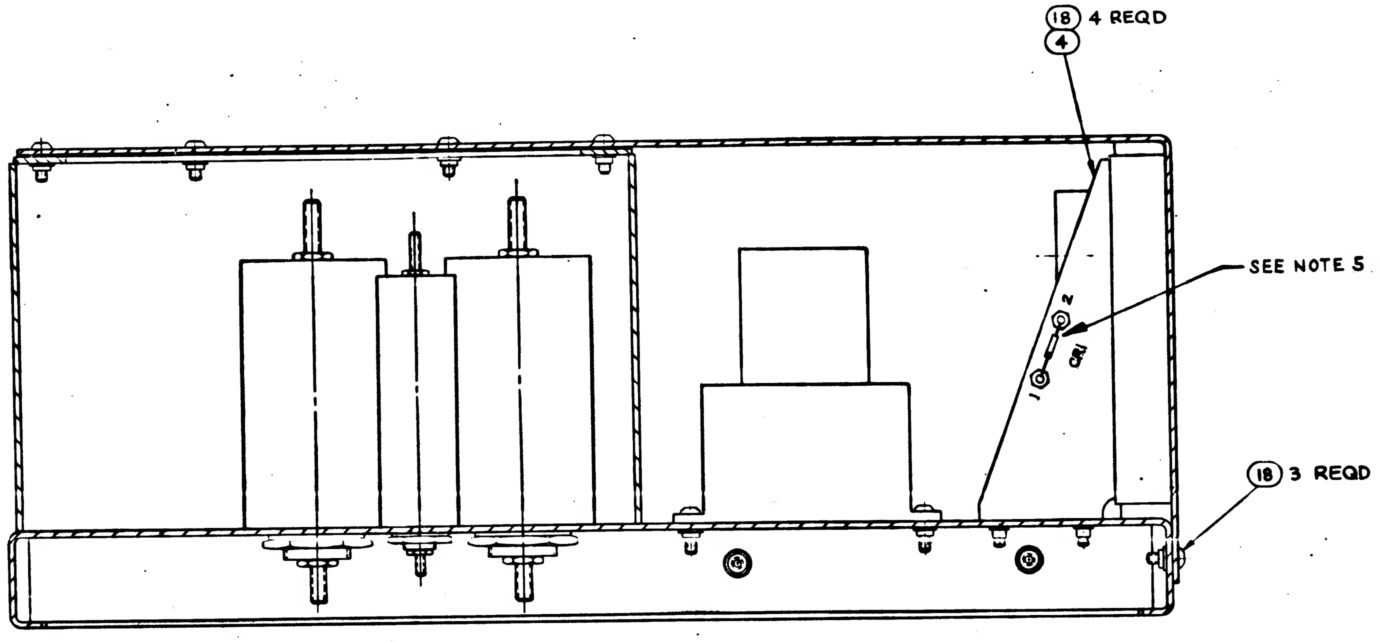
AC POWER PROTECTION
PANEL ASSEMBLY

CODE IDENT NO.
SIZE E
1900075
SCALE FULL
SHEET 2 OF 2

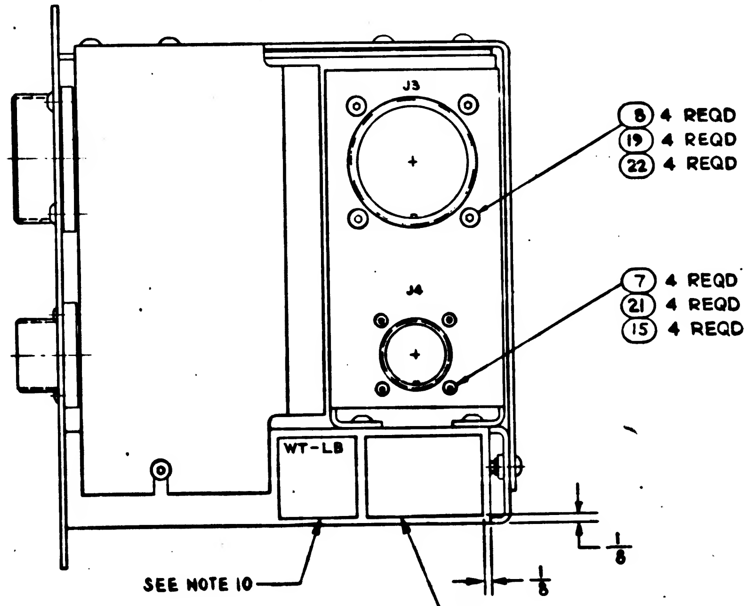
1900075 D

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
| D | | ⑪ THIS SHEET ADDED<br>TDRR 01799 | MXC-18732 | 18-JUNE-63 | M.G. |
| E | | ⑪ CHANGE IN ACCORDANCE WITH MXC-187702 | — | 20-63 | M.G. |
| G | | CHANGE IN ACCORDANCE WITH MXC-188671 | — | 16 SEP 63 | J.N. |
| J | | CHANGE IN ACCORDANCE WITH MXC 90..8<br>TDRR 04583 | | 2-63<br>63 | W. |



SECTION A-A



VIEW A-A

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01790 DATE 2 July 63

Ⓓ THIS SHEET ADDED

| | | |
|---|---|---|
| UNLESS OTHERWISE SPECIFIED<br>DIMENSIONS ARE IN INCHES<br>TOLERANCES ON<br>FRACTIONS + — − —<br>DECIMALS + — − —<br>ANGLES + — − — | AC SPARK PLUG DIVISION, GMC<br>MILWAUKEE, WISCONSIN | MANNED<br>SPACECRAFT CENTER<br>HOUSTON, TEXAS |
| | ACSP PN | |
| DO NOT SCALE THIS DRAWING | DRAWN A.J. FLUDER DATE 12-APR-63<br>CHECKED KONSLER 15-APR-63<br>APPROVAL GIBBONS 15-APR-63<br>APPROVAL | AC POWER PROTECTION PANEL ASSEMBLY |
| MATERIAL — | NASA APPROVAL 7/2/63 | CODE IDENT NO. / SIZE E / 1900075 |
| CONTRACT NAS 9-497 | MIT APPROVAL | SCALE FULL / SHEET 2 OF 2 |

1900075 J

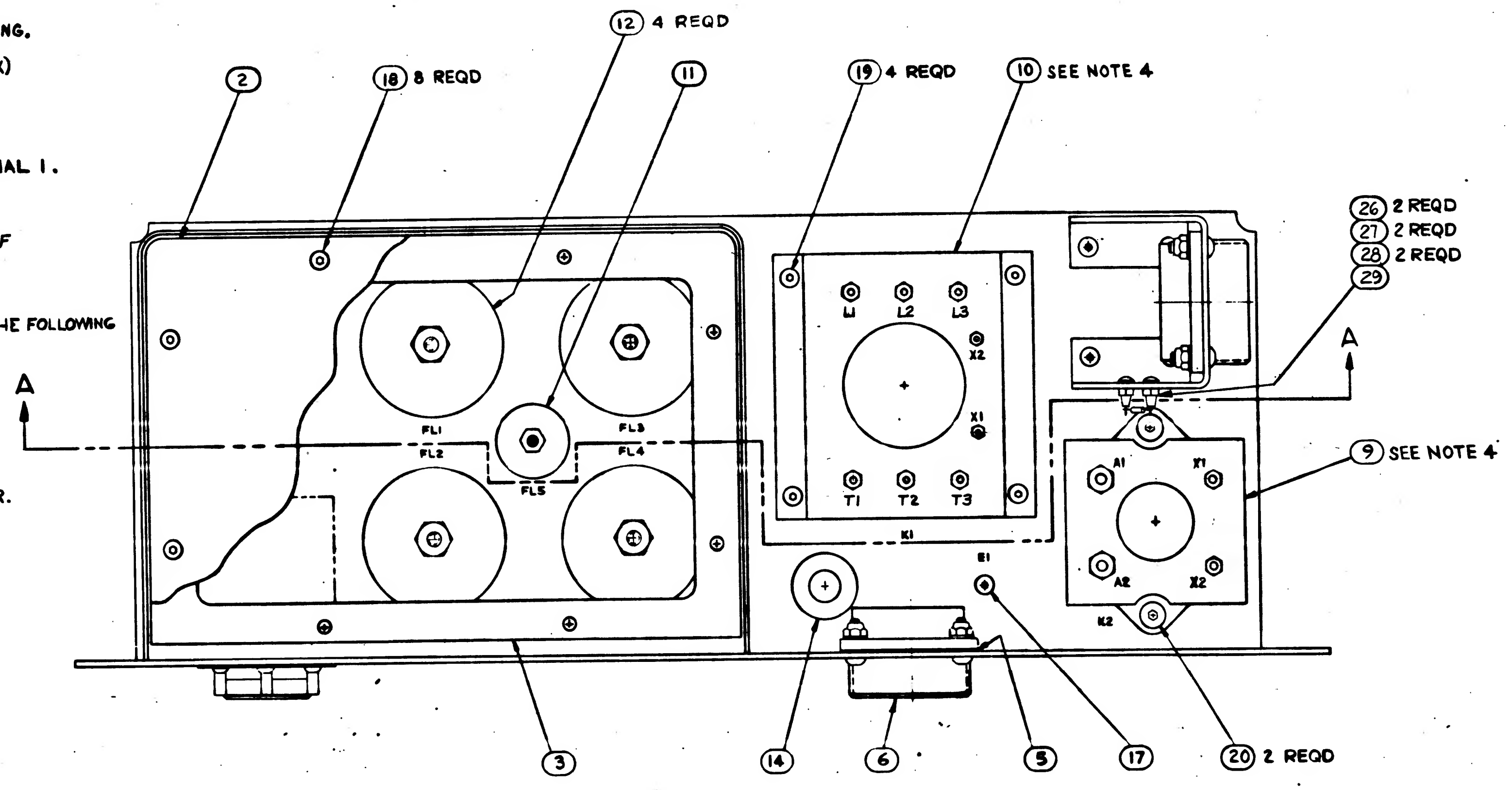
INCHES 0 1 2
PHOTOGRAPHIC SCALE ONLY

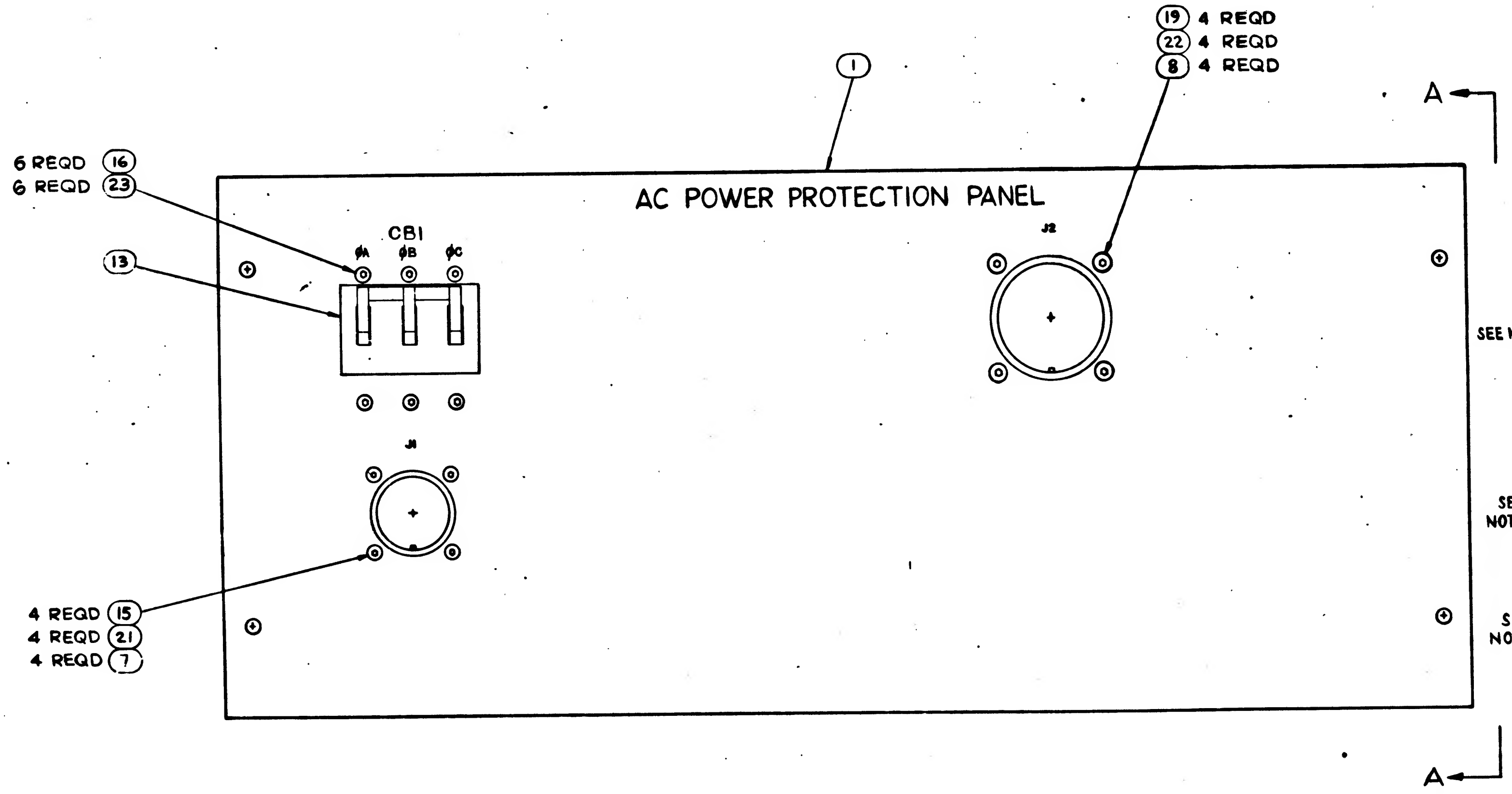
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM- SEE SPECIFICATION CONTROL DRAWING.
3. SOLDER PER MIL-S-6872 (ES-2505-1 TYPE 2 FLUX) USING ITEMS ㉔ & ㉕.
4. POSITION ITEMS ⑨ & ⑩ AS SHOWN.
5. CONNECT CATHODE OF DIODE CR1 TO TERMINAL 1.
6. TEST PER ATP-1900075
7. *APPLY ITEM NO. 35 TO MOUNTING STUDS OF ITEM NO. 12 AND TO ITEM NO. 16.*
8. TIGHTEN TERMINAL NUTS ON RFI FILTERS TO THE FOLLOWING TORQUES:

| ITEM | THREAD SIZE | TORQUE (LB-IN.) |
|---|---|---|
| ⑪ | 8-32 | 12-14 |
| ⑫ | 1/4-20 | 25-30 |

9. APPLY NAMEPLATE PER MIL-P-19834A. LOCATE AS SHOWN. USE SOLVENT ACTIVATOR.
10. MARK WEIGHT _____ LB PER ND1002123. CENTRALIZE AS SHOWN.





REPLACES REVISION C *WITH CHANGE*

REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
|---|---|---|---|---|---|
| D | | (1) REPLACES REVISION C WITH CHANGE.<br>(2) CHANGED NO. OF GASKETS FROM 1 TO 2.<br>REVISION STATUS CHANGED | MYC-8732 | 18-JUNE-63 | M.G.<br>J.E.G. |
| E | - | (1) CHANGE IN ACCORDANCE WITH MXC-187702<br>REVISION STATUS CHANGED | - | 26-JUL-63 | M.G. |
| F | | CHANGE IN ACCORDANCE WITH MXC-188124 | | AUG 63 | CAN |
| G | | CHANGE IN ACCORDANCE WITH MXC-188671<br>REVISION STATUS CHANGED | | 8 SEP 63 | A.A. |
| H | | CHANGED IN ACCORDANCE WITH MXC 90056<br>REVISION STATUS CHANGED | | 23 SEP 63 | A.N. |
| J | | CHANGE IN ACCORDANCE WITH MXC 190118<br>TDRR 04-83 | | 2-DEC-63<br>12 DEC 63 | A.T.<br>WK |

| SHEET 1 | SHEET 2 |
|---|---|
| J | J |
| H | G |
| G | G |
| F | E |

REVISION STATUS OF SHEETS

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. originally D1313 DATE 8 May 63

| QUANTITY REQUIRED | | | | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | 011 | | | | |
| | | | AR | | 35 | | SCALING & RETAINING COMPOUND (ES 2544-3) MIL-S-40083 (GRD) (L-20) |
| | | | 1 | | 34 | | NAMEPLATE - SELF BONDING |
| | | | 1 | | 33 | 1900399 | WIRING HARNESS 'A' |
| | | | X | | 32 | ATP-1900075 | TEST SPECIFICATION |
| | | | X | | 31 | 1900398 | WIRING DIAGRAM AC POWER PROTECTION |
| | | | X | | 30 | 1900397 | SCHEMATIC DIAGRAM, ELECTRICAL |
| | | | 1 | | 29 | IN649<br>1896966-006 | DIODE (MIL-S-19500) |
| | | | 2 | | 28 | MS35338-78 | WASHER, LOCK |
| | | | 2 | | 27 | 1006783-18 | SCREW-BUTTON HD. |
| | | | 2 | | 26 | 1006921-1 | TERMINAL, STANDOFF |
| | | | AR | | 25 | QQ-S-571 | FLUX, TYPE AR (ES2175 TYPE 1 OR 2) MIL-F-14256 (ES-2798) |
| | | | AR | | 24 | QQ-S-571 | SOLDER, SN60 (ES2175 TYPE 1) |
| | | | 6 | | 23 | 1006997 | WASHER, FLAT |
| | | | 8 | | 22 | AN363C832 | NUT, SELF-LOCKING |
| | | | 8 | | 21 | MS20365-440 | NUT, SELF-LOCKING |
| | | | 2 | | 20 | 1006783-57 | SCREW-BUTTON HD |
| | | | 12 | | 19 | 1006783-28 | SCREW-BUTTON HD |
| | | | 15 | | 18 | 1006783-27 | SCREW-BUTTON HD |
| | | | 1 | | 17 | 1006783-26 | SCREW-BUTTON HD |
| | | | 6 | | 16 | 1006783-21 | SCREW-BUTTON HD |
| | | | 8 | | 15 | 1006783-20 | SCREW-BUTTON HD |
| | | | 1 | | 14 | MS35489-49 | GROMMET |
| | | | 1 | | 13 | 1015805-001 | CIRCUIT BREAKER |
| | | | 4 | | 12 | 1015823 | FILTER, RADIO INTERFERENCE |
| | | | 1 | | 11 | 1015822 | FILTER, RADIO INTERFERENCE |
| | | | 1 | | 10 | 1015804-001 | RELAY, ARMATURE |
| | | | 1 | | 9 | MS24141-D2 | RELAY, ARMATURE |
| | | | 8 | | 8 | AN960C8 | WASHER, FLAT |
| | | | 8 | | 7 | AN960C4 | WASHER, FLAT |
| | | | 1 | | 6 | 1900174 | WIRING HARNESS, A |
| | | | 1 | | 5 | 1900173 | GASKET, CONNECTOR |
| | | | 1 | | 4 | 1900172 | BRACKET, CONNECTOR |
| | | | 1 | | 3 | 1900171 | GASKET, FRAME |
| | | | 1 | | 2 | 1900170 | COVER, CHASSIS |
| | | | 1 | | 1 | 1900167 | CHASSIS (INSEPARABLE) ASSY |

SEE NOTE 2 (items 26–28)

SEE NOTE 2 (items 15–20)

SEE NOTE 2 (items 10–13)

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900004 | 1900004 | -011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

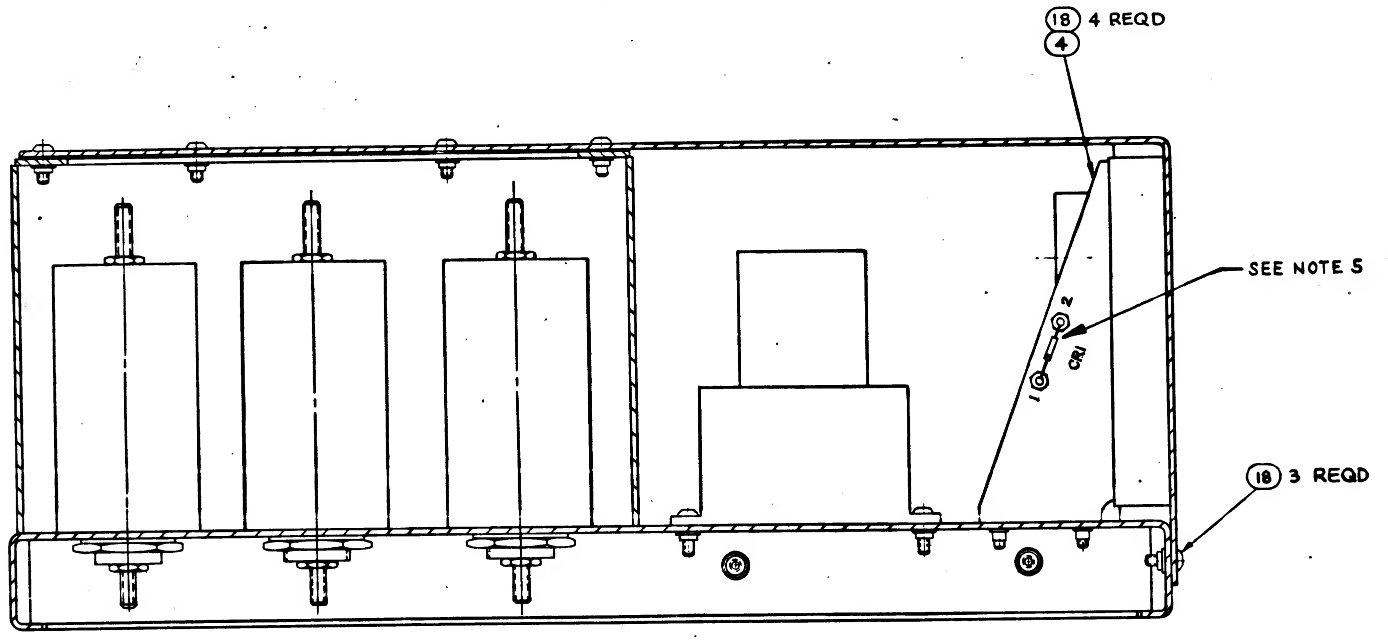
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN A.J. FLUDER DATE
CHECKED KOHSLER 15APR63
APPROVAL GIBBONS 15APR63
APPROVAL
NASA APPROVAL 7/2/63
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

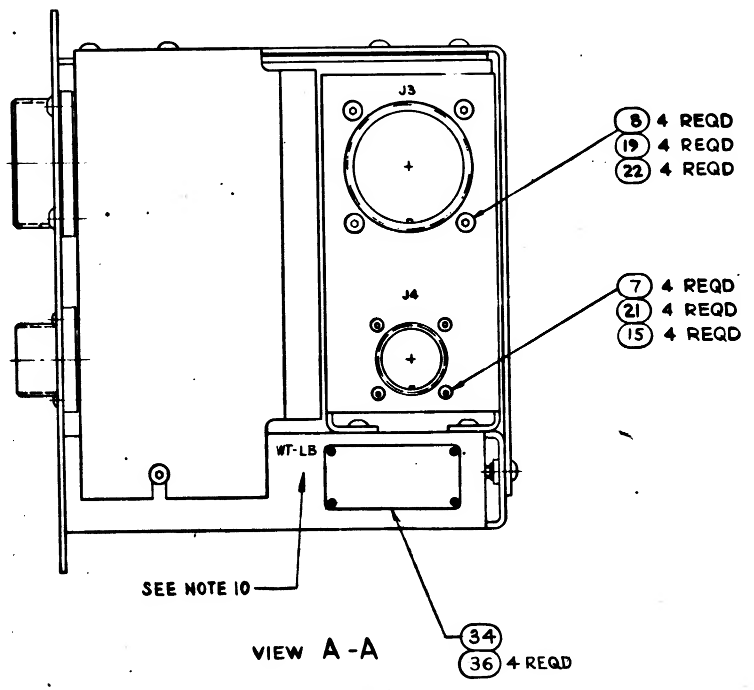
## AC POWER PROTECTION PANEL ASSEMBLY

CODE IDENT NO. SIZE E 1900075
SCALE FULL SHEET 1 OF 2

| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD. |
|---|---|---|---|---|---|
| REVISIONS | | | | | |
| D | | (1) THIS SHEET ADDED TDRR 01799 | MXC-187321 | 10-JUNE-63 | M.G. |
| E | | (1) CHANGE IN ACCORDANCE WITH MXC-187702 | — | 26-JUN-63 | M.G. |
| G | | CHANGE IN ACCORDANCE WITH MXC-188671 | | 18 SEP 63 | A.N. |
| J | | CHANGE IN ACCORDANCE WITH MXC 90118 TDRR 04583 | | 2-OCT-63 | |
| L | | CHANGE IN ACCORDANCE WITH MXC-190927 | | 3 DEC 63 | E.L. |
| M | | CHANGE IN ACCORDANCE WITH MXC-191568 | | 20 DEC 63 | |
| N | | CHANGE IN ACCORDANCE WITH C.N. 93505 PER TDRR 06148 | | 20 JAN 64 | |



SECTION A-A



VIEW A-A

**FOR INFORMATION ONLY**

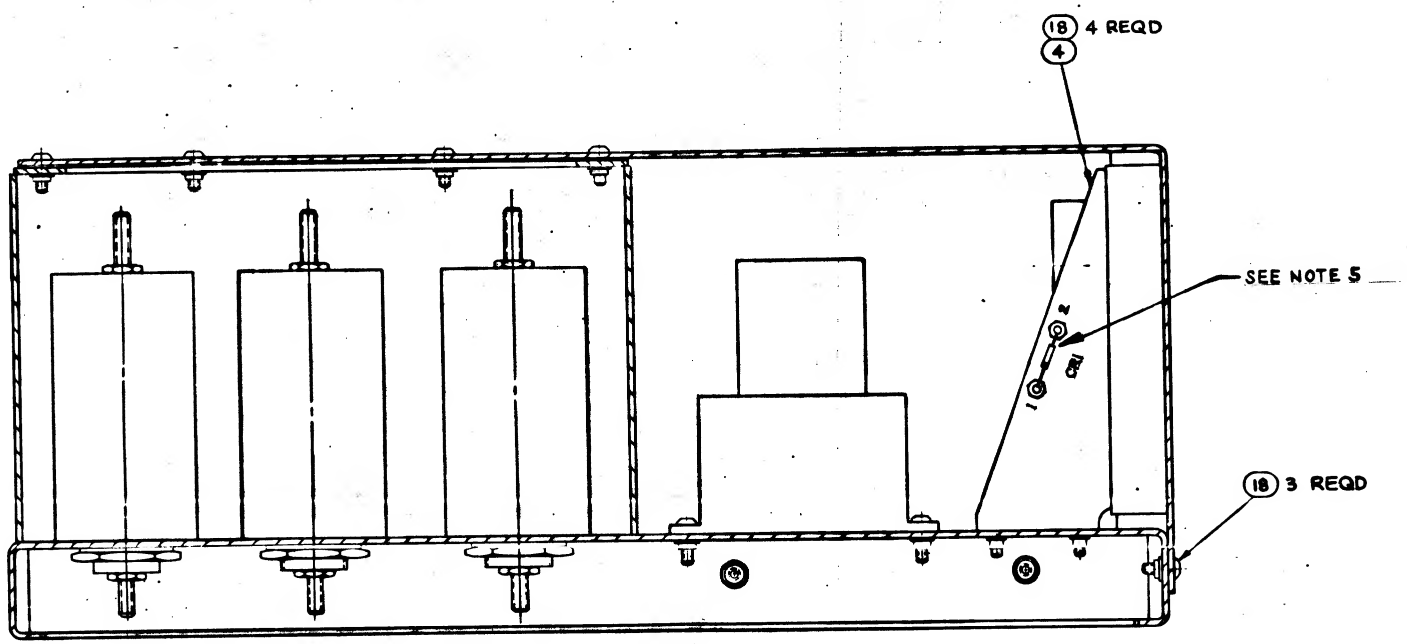
CLASS B RELEASE TDR No. 01799 DATE 2 July 63

Ⓓ THIS SHEET ADDED

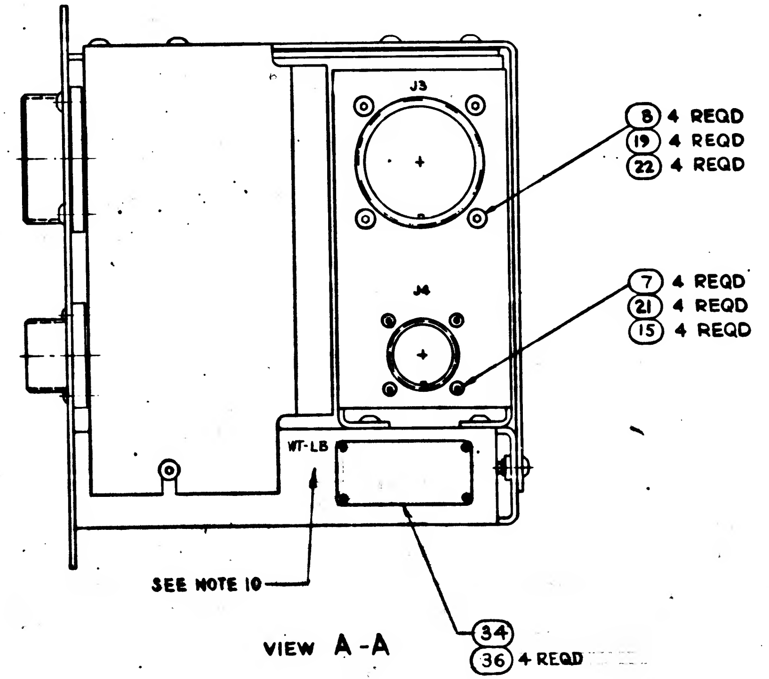
| | | |
|---|---|---|
| UNLESS OTHERWISE SPECIFIED<br>DIMENSIONS ARE IN INCHES<br>TOLERANCES ON<br>FRACTIONS ± — DECIMALS ± — ANGLES ± — | AC SPARK PLUG DIVISION, GMC<br>MILWAUKEE, WISCONSIN | MANNED SPACECRAFT CENTER<br>HOUSTON, TEXAS |
| DO NOT SCALE THIS DRAWING | ACSP PN | AC POWER PROTECTION PANEL ASSEMBLY |
| MATERIAL — | DRAWN A.J. FLUDER DATE 12-APR-63<br>CHECKED KONSLER 15-APR-63<br>APPROVAL GIBBONS 15-APR-63<br>APPROVAL<br>NASA APPROVAL 7/2/63<br>MIT APPROVAL | CODE IDENT NO. SIZE E 1900075 |
| CONTRACT NAS 9-497 | | SCALE FULL SHEET 2 OF 2 |

## REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
|---|---|---|---|---|---|
| D | | (1) THIS SHEET ADDED TDRR 01799 | MXC-187321 | 18-JUNE 63 | M.G. J.E.G. |
| E | | (1) CHANGE IN ACCORDANCE WITH MXC-187702 | — | 26-JUNE-63 | M.G. |
| G | | CHANGE IN ACCORDANCE WITH MXC-188671 | | 18 SEP 63 | A.N. |
| J | | CHANGE IN ACCORDANCE WITH MXC 190118 TDRR 04583 | | 2-OCT-63 | |
| | | | | 12 NOV 63 | WIC |
| L | | CHANGE IN ACCORDANCE WITH MXC-190927 | | 3 DEC 63 | J.E.L. |
| M | | CHANGE IN ACCORDANCE WITH MXC-191568 | | 20 DEC 63 | J.E.L. |
| N | | CHANGE IN ACCORDANCE WITH CM 193505 PER TDRR 06148 | | 26 JAN 64 | |
| | | | | 3-10-64 | |



SECTION A-A



VIEW A-A

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01799 DATE 2 July 63

Ⓓ THIS SHEET ADDED

| | | |
|---|---|---|
| UNLESS OTHERWISE SPECIFIED<br>DIMENSIONS ARE IN INCHES<br>TOLERANCES ON<br>FRACTIONS ± — DECIMALS ± — ANGLES ± — | AC SPARK PLUG DIVISION, GMC<br>MILWAUKEE, WISCONSIN<br>ACSP PN | MANNED<br>SPACECRAFT CENTER<br>HOUSTON, TEXAS |
| DO NOT SCALE THIS DRAWING | DRAWN A.J. FLUDER DATE 12-APR 63<br>CHECKED KANSLER 15-APR-63<br>APPROVAL GIBBONS 15-APR-63<br>APPROVAL | AC POWER PROTECTION<br>PANEL ASSEMBLY |
| MATERIAL — | NASA APPROVAL 7/1/63 | CODE IDENT NO. SIZE E 1900075 |
| CONTRACT NAS 9-497 | MIT APPROVAL | SCALE FULL SHEET 2 OF 2 |

1900075 N

INCHES 0 1 2
PHOTOGRAPHIC SCALE ONLY

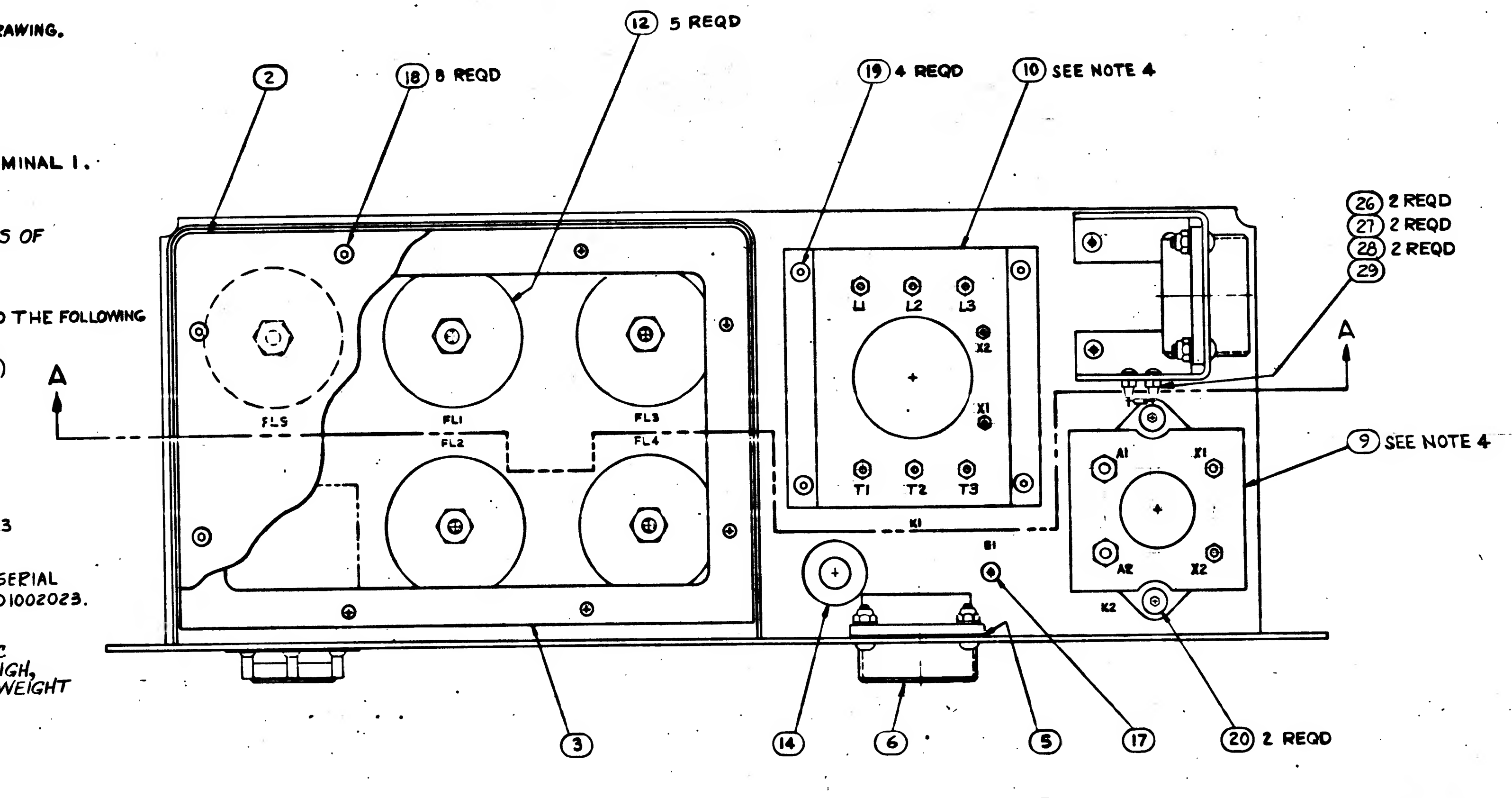
1900075

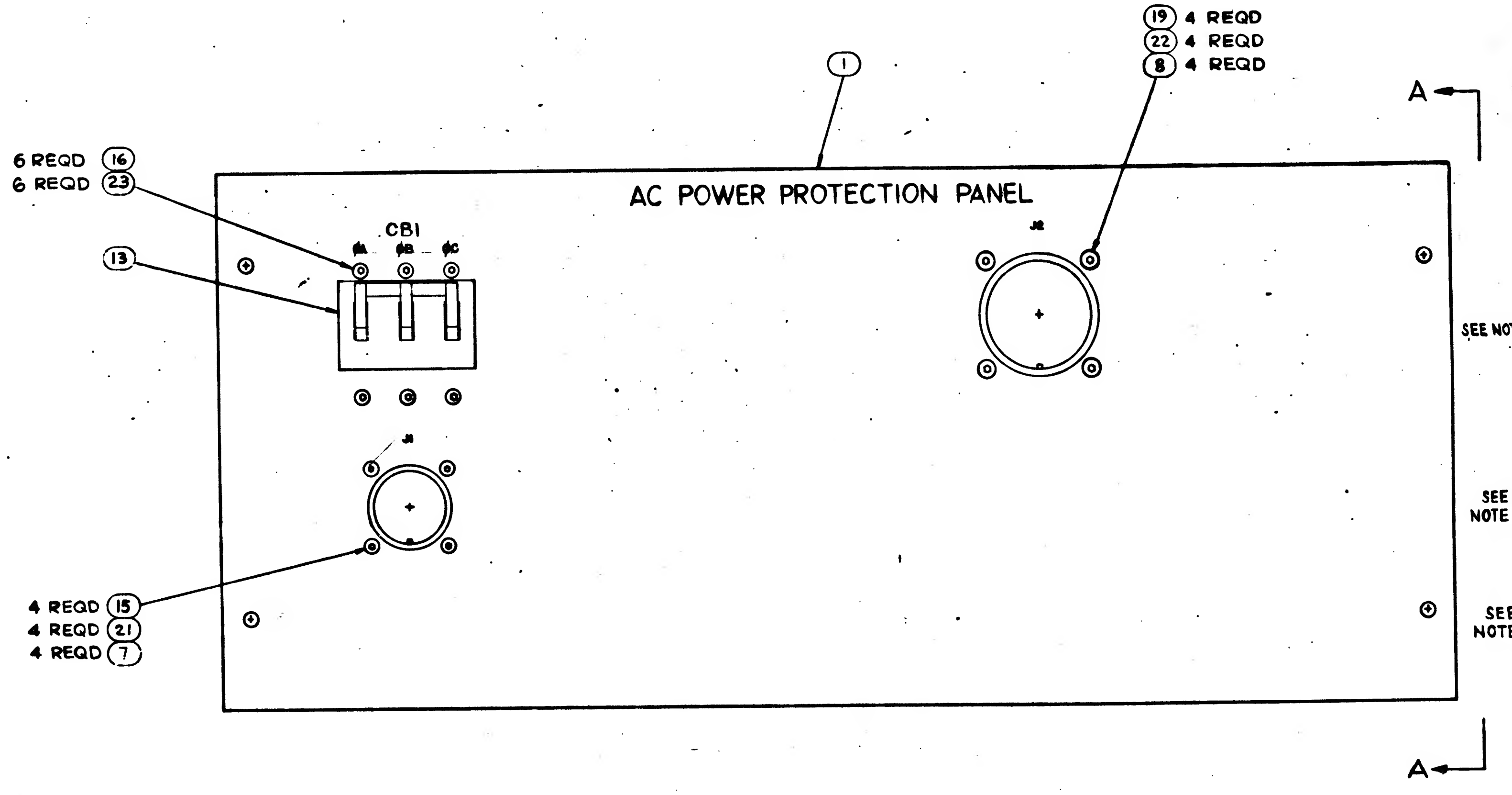
NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM- SEE SPECIFICATION CONTROL DRAWING.
3. SOLDER PER MIL-STD-440 USING ITEMS ㉔ & ㉕.
4. POSITION ITEMS ⑨ & ⑩ AS SHOWN.
5. CONNECT CATHODE OF DIODE CR1 TO TERMINAL 1.
6. TEST PER ATP-1900075
7. APPLY ITEM NO. 35 TO MOUNTING STUDS OF ITEM NO. 12 AND TO ITEM NO. 16.
8. TIGHTEN TERMINAL NUTS ON RFI FILTERS TO THE FOLLOWING TORQUES:

| ITEM | THREAD SIZE | TORQUE (LB-IN.) |
|---|---|---|
| ⑪ | 8-32 | 12-14 |
| ⑫ | 1/4-20 | 25-30 |

9.
10. MARK WEIGHT OF ASSEMBLY PER ND1002123 ADJACENT TO NAMEPLATE
11. MARK APPLICABLE CONTRACT NUMBER AND SERIAL NUMBER TO ITEM ㉞ IN ACCORDANCE WITH ND1002023. LETTERS AND NUMERALS TO BE .06 HIGH.
12. MARK "SCHEM" AND APPLICABLE SCHEMATIC DRAWING NUMBER PER ND1002019, .12 HIGH, COLOR BLACK, BELOW OR ADJACENT TO WEIGHT MARKING.





~~REPLACES REVISION C~~ WITH CHANGE

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
| D | | (1) REPLACES REVISION C WITH CHANGE.<br>(2) CHANGED NO. OF SHEETS FROM 1 TO 2.<br>REVISION STATUS CHANGED | MXC-18732<br>TMR0799 | 18-JUNE-63 | M.G.<br>J. E. G. |
| E | - | (1) CHANGE IN ACCORDANCE WITH MXC-187702<br>REVISION STATUS CHANGED | - | 26-JULY-63 | M.G. |
| F | | CHANGE IN ACCORDANCE WITH MXC-188124 | | AUG 63 | CAM |
| G | | CHANGE IN ACCORDANCE WITH MXC-188671<br>REVISION STATUS CHANGED | | 18 SEP 63 | A.N. |
| H | | CHANGED IN ACCORDANCE WITH MXC 190056<br>REVISION STATUS CHANGED | | 23 SEP 63 | A.N. |
| J | | CHANGE IN ACCORDANCE WITH MXC 190118<br>TDRR 04583 | | 2-OCT-63 | A.F.W. P.F. |
| K | | CHANGE IN ACCORDANCE WITH MXC-190658 PER TDRR 06847 | | | J.E.L. |
| L | | CHANGE IN ACCORDANCE WITH MXC-190927<br>REVISED REVISION STATUS BLOCK | | 3 DEC 63 | J.E.L. |
| M | | CHANGE IN ACCORDANCE WITH MXC-191568<br>REVISED REV. STATUS BLOCK | | 26 DEC 63 | J.E.L. |
| N | | CHANGE IN ACCORDANCE WITH CM193505 PER TDRR 06848 | | 26 JAN 64 | GG |
| P | | CHANGE IN ACCORDANCE WITH CM-194445<br>REVISED PER TDR 06849 | | 30-JAN-64 | |

| SHEET 1 | SHEET 2 |
|---|---|
| P | N |
| N | N |
| M | M |
| L | L |
| K | J |
| J | J |
| H | G |
| G | G |
| F | E |

REVISION STATUS OF SHEETS

| QUANTITY REQUIRED | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|
| 4 | | 36 | AN535-00-4 | SCREW, DRIVE, ROUND HEAD |

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 10123 originally DATE 8 Aug 63

| QUANTITY REQUIRED | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|
| AR | | 35 | | SEALING & RETAINING COMPOUND (ES2544-3) MIL-S-40083 |
| 1 | | 34 | 1901304-123 | NAMEPLATE |
| 1 | | 33 | 1900399 | WIRING HARNESS 'A' |
| X | | 32 | ATP-1900075 | TEST SPECIFICATION |
| X | | 31 | 1900398 | WIRING DIAGRAM AC POWER PROTECTION |
| X | | 30 | 1900397 | SCHEMATIC DIAGRAM, ELECTRICAL |
| 1 | | 29 | 1N649 | DIODE (MIL-S-19500) |
| | | | 1896966-006 | |
| 2 | | 28 | MS35338-78 | WASHER, LOCK |
| 2 | | 27 | 1006783-18 | SCREW-BUTTON HD. |
| 2 | | 26 | SE190D01 | TERMINAL, STANDOFF (MIL-T-55155/19) |
| AR | | 25 | QQ-S-571 | FLUX, TYPE AR (ES2175 TYPE 1 OR 2) MIL-F-14256 (ES-2798) |
| AR | | 24 | QQ-S-571 | SOLDER, SN60 (ES2175 TYPE I) |
| 6 | | 23 | 1006997 | WASHER, FLAT |
| 8 | | 22 | AN363C832 | NUT, SELF-LOCKING |
| 8 | | 21 | MS20365-440 | NUT, SELF-LOCKING |
| 2 | | 20 | 1006783-57 | SCREW-BUTTON HD |
| 12 | | 19 | 1006783-28 | SCREW-BUTTON HD |
| 15 | | 18 | 1006783-27 | SCREW-BUTTON HD |
| 1 | | 17 | 1006783-26 | SCREW-BUTTON HD |
| 6 | | 16 | 1006783-21 | SCREW-BUTTON HD |
| 8 | | 15 | 1006783-20 | SCREW-BUTTON HD |
| 1 | | 14 | MS35489-49 | GROMMET |
| 1 | | 13 | 1015805-001 | CIRCUIT BREAKER |
| 5 | | 12 | 1015823 | FILTER, RADIO INTERFERENCE |
| | | | | |
| 1 | | 10 | 1015804-001 | RELAY, ARMATURE |
| 1 | | 9 | MS24141-D2 | RELAY, ARMATURE |
| 8 | | 8 | AN960C8 | WASHER, FLAT |
| 8 | | 7 | AN960C4 | WASHER, FLAT |
| 1 | | 6 | 1900174 | WIRING HARNESS, A |
| 1 | | 5 | 1900173 | GASKET, CONNECTOR |
| 1 | | 4 | 1900172 | BRACKET, CONNECTOR |
| 1 | | 3 | 1900171 | GASKET, FRAME |
| 1 | | 2 | 1900170 | COVER, CHASSIS |
| 1 | | 1 | 1900167 | CHASSIS (INSEPARABLE) ASSY |

SEE NOTE 2 (items 27, 15–20, 10–13)

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900004 | 1900004 | -011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN A.J. FLUDER
CHECKED KOHLSLER
APPROVAL GIBBONS
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

AC POWER PROTECTION PANEL ASSEMBLY

CODE IDENT NO. | SIZE E | 1900075
SCALE FULL | SHEET 1 OF 2

1900075 P

INCHES
PHOTOGRAPHIC SCALE ONLY

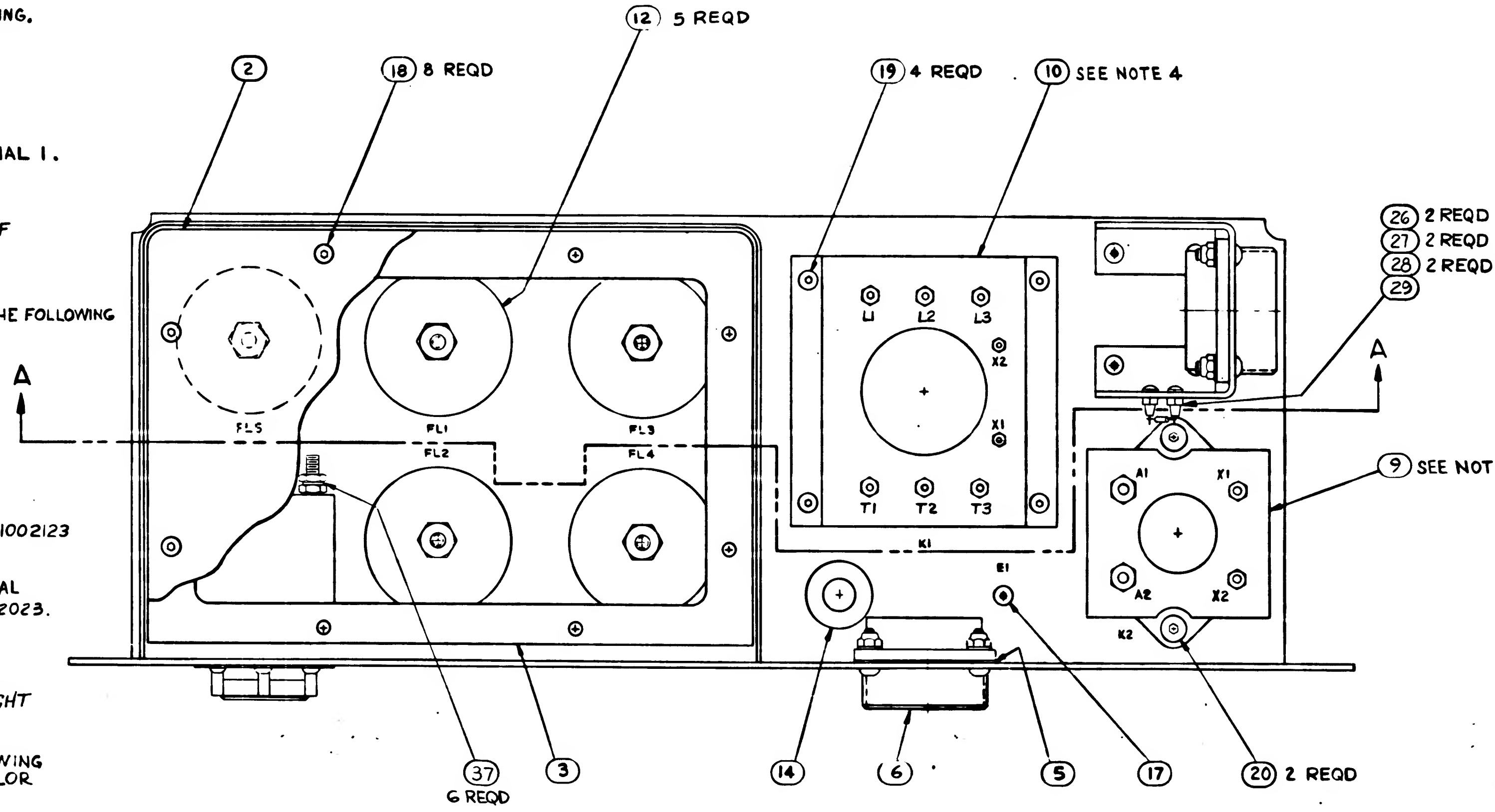
NOTES:

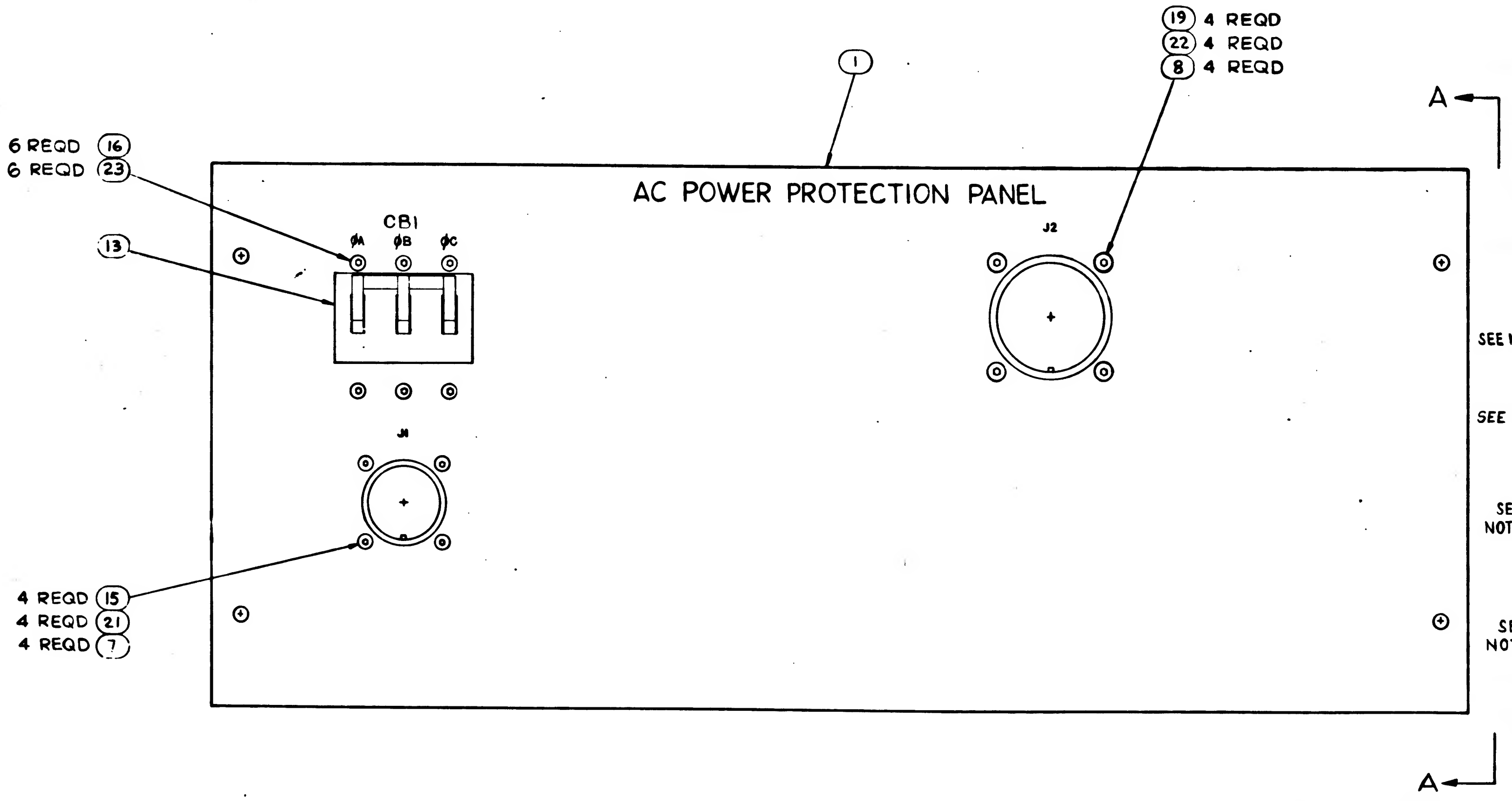
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
2. VENDOR ITEM- SEE SPECIFICATION CONTROL DRAWING.
3. SOLDER PER MIL-STD-440 USING ITEMS (24) & (25).
4. POSITION ITEMS (9) & (10) AS SHOWN.
5. CONNECT CATHODE OF DIODE CR1 TO TERMINAL 1.
6. TEST PER ATP-1900075
7. APPLY *ITEM NO. 35 TO MOUNTING STUDS OF ITEM NO. 12 AND TO ITEM NO. 16.*
8. TIGHTEN TERMINAL NUTS ON RFI FILTERS TO THE FOLLOWING TORQUES:

| ITEM | THREAD SIZE | TORQUE (LB-IN.) |
|---|---|---|
| (12) | 1/4-20 | 25-30 |

9\.

10. MARK WEIGHT OF ASSEMBLY (36 LBS) PER ND1002123 ADJACENT TO NAMEPLATE
11. MARK APPLICABLE CONTRACT NUMBER AND SERIAL NUMBER TO ITEM (34) IN ACCORDANCE WITH ND1002023. LETTERS AND NUMERALS TO BE .06 HIGH.
12. *MARK "SCHEM" AND APPLICABLE SCHEMATIC DRAWING NUMBER PER ND1002019, .12 HIGH, COLOR BLACK, BELOW OR ADJACENT TO WEIGHT MARKING.*
13. MARK "DWG REV LTR" AND APPLICABLE DRAWING REVISION LETTER PER ND1002019, .12 HIGH, COLOR BLACK IN LOCATION SHOWN.





Ⓤ **REPLACED WITH CHANGE BY REV V**
REPLACES REVISION C *WITH CHANGE*

REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
|---|---|---|---|---|---|
| D | | (1) REPLACES REVISION C WITH CHANGE.<br>(2) CHANGED NO. OF SHEETS FROM 1 TO 2.<br>REVISION STATUS CHANGED | MXC-18732 | 8-JUNE-63 | M.G.<br>J.E.G. |
| E | – | (1) CHANGE IN ACCORDANCE WITH MXC-187702<br>REVISION STATUS CHANGED | – | 26 JULY -63 | M.G. |
| F | | CHANGE IN ACCORDANCE WITH MXC-188124 | | 1 AUG 63 | CAM |
| G | | CHANGE IN ACCORDANCE WITH MXC-188671<br>REVISION STATUS CHANGED | | 18 SEP 63 | A.N. |
| H | | CHANGED IN ACCORDANCE WITH MXC 190056<br>REVISION STATUS CHANGED | | 23 SEP 63 | A.N. |
| J | | CHANGE IN ACCORDANCE WITH MXC 190118<br>TDRR 04583 | | 2-OCT-63<br>2 NOV 63 | A.F.W.<br>NK |
| K | | CHANGE IN ACCORDANCE WITH MXC-190658 PER TDRR 06847 | | 20 Nov 63<br>3-10-64 | J.E.L. |
| L | | CHANGE IN ACCORDANCE WITH MXC-190927<br>REVISED REVISION STATUS BLOCK | | 3 DEC 63 | J.E.L. |
| M | | CHANGE IN ACCORDANCE WITH MXC-191568<br>REVISED REV. STATUS BLOCK | | 20 DEC 63 | J.E.L. |
| N | | CHANGE IN ACCORDANCE WITH CM 193505 PER TDRR 06848 | | 24 JAN 64<br>3-10-64 | GG<br>MEM |
| P | | CHANGE IN ACCORDANCE WITH CM 194445<br>REVISED PER TDR 06849 | | 30-JAN-64<br>3-10-64 | A.F.W. |
| R | | CHANGE IN ACCORDANCE WITH CM 195339 PER TDRR 08839 | | 25 MAR 64 | RJ7 |
| S | – | CHANGE IN ACCORDANCE WITH CM-195511 PER TDRR 08839 | – | 9 APR 64 | J.B.<br>MEM |
| T | | CHANGE IN ACCORDANCE WITH CM 195965 PER TDRR 08840 | | 22 APR 64 | RS<br>WF |
| U | | REPLACED WITH CHANGE BY REV. V PER CM196960<br>REVISED PER TDR 08841 | | 11 MAY 64 | |

V2-64

| SHEET 1 | SHEET 2 |
|---|---|
| U | U |
| T | R |
| S | R |
| R | R |
| P | N |
| N | N |
| M | M |
| L | L |
| K | J |
| J | J |
| H | G |
| G | G |
| F | E |

REVISION STATUS OF SHEETS

**FOR INFORMATION ONLY**

**CLASS B RELEASE TDR No.** [illegible] originally **DATE** [illegible]

| | | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | | 37 | MS35333-73 | WASHER, LOCK, INT. TOOTH |
| | | | | 4 | | 36 | AN535-00-4 | SCREW, DRIVE, ROUND HD. (1897109-004) |
| | | | | AR | | 35 | | SEALING & RETAINING COMPOUND (ES2544-3) MIL-S-40083 (GRD) (CL-2) |
| | | | | 1 | | 34 | 1901304-123 | NAMEPLATE |
| | | | | 1 | | 33 | 1900399 | WIRING HARNESS 'A' |
| | | | | X | | 32 | ATP-1900075 | TEST SPECIFICATION |
| | | | | X | | 31 | 1900398 | WIRING DIAGRAM AC POWER PROTECTION |
| | | | | X | | 30 | 1900397 | SCHEMATIC DIAGRAM, ELECTRICAL |
| | | | | 1 | | 29 | 1N649<br>1896966-006 | DIODE (MIL-S-19500) |
| | | | | 2 | | 28 | MS35338-78 | WASHER, LOCK |
| SEE NOTE 2 | | | | 2 | | 27 | 1006783-18 | SCREW-BUTTON HD. |
| | | | | 2 | | 26 | SE190D01 | TERM., STANDOFF (MIL-T-55155/19)(1896962-002) |
| | | | | AR | | 25 | QQ-S-571 | FLUX, TYPE AR (ES2175 TYPE 1 OR 2) MIL-F-14256 (ES-2798) |
| | | | | AR | | 24 | QQ-S-571 | SOLDER, SN60 (ES2175 TYPE I) |
| SEE NOTE 2 | | | | 6 | | 23 | 1006997 | WASHER, FLAT |
| | | | | 8 | | 22 | AN363C832 | NUT, SELF-LOCKING (1896990-281) |
| | | | | 8 | | 21 | MS20365-440 | NUT, SELF-LOCKING |
| SEE NOTE 2 | | | | 2 | | 20 | 1006783-57 | SCREW-BUTTON HD |
| | | | | 12 | | 19 | 1006783-28 | SCREW-BUTTON HD |
| | | | | 15 | | 18 | 1006783-27 | SCREW-BUTTON HD |
| | | | | 1 | | 17 | 1006783-26 | SCREW-BUTTON HD |
| | | | | 6 | | 16 | 1006783-21 | SCREW-BUTTON HD |
| | | | | 8 | | 15 | 1006783-20 | SCREW-BUTTON HD |
| | | | | 1 | | 14 | MS35489-49 | GROMMET |
| SEE NOTE 2 | | | | 1 | | 13 | 1015805-001 | CIRCUIT BREAKER |
| | | | | 5 | | 12 | 1015823 | FILTER, RADIO INTERFERENCE |
| | | | | | | | | |
| | | | | 1 | | 10 | 1015804-001 | RELAY, ARMATURE |
| | | | | 1 | | 9 | MS24141-D2 | RELAY, ARMATURE (1897071-002) |
| | | | | 8 | | 8 | AN960C8 | WASHER, FLAT (1897006-028) |
| | | | | 8 | | 7 | AN960C4 | WASHER, FLAT (1897006-024) |
| | | | | 1 | | 6 | 1900174 | WIRING HARNESS, A |
| | | | | 1 | | 5 | 1900173 | GASKET, CONNECTOR |
| | | | | 1 | | 4 | 1900172 | BRACKET, CONNECTOR |
| | | | | 1 | | 3 | 1900171 | GASKET, FRAME |
| | | | | 1 | | 2 | 1900170 | COVER, CHASSIS |
| | | | | 1 | | 1 | 1900167 | CHASSIS (INSEPARABLE) ASSY |

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900004 | 1900004 | -011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

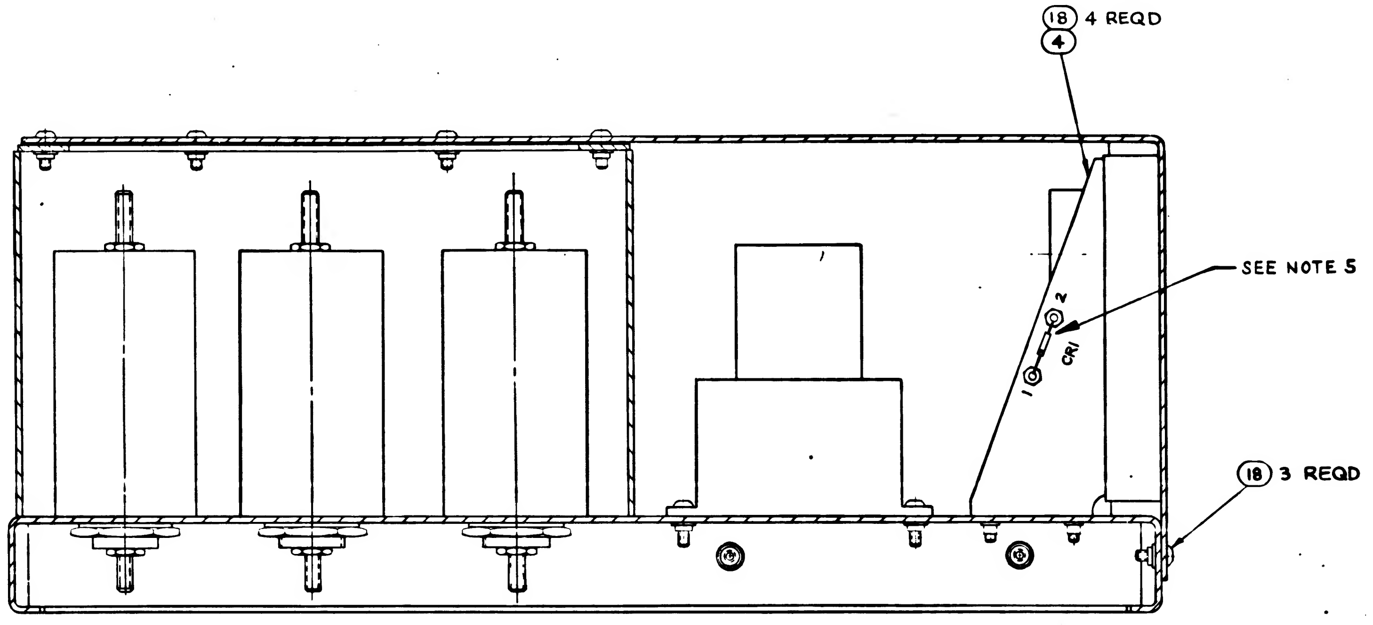
AC SPARK PLUG DIVISION, GMC
MILWAUKEE WISCONSIN
ACSP PN
DRAWN A.J. FLUDER DATE [illegible]
CHECKED KONSLER 15 APR 63
APPROVAL GIBBONS 15 APR 63
APPROVAL [illegible]
NASA APPROVAL 7/2/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

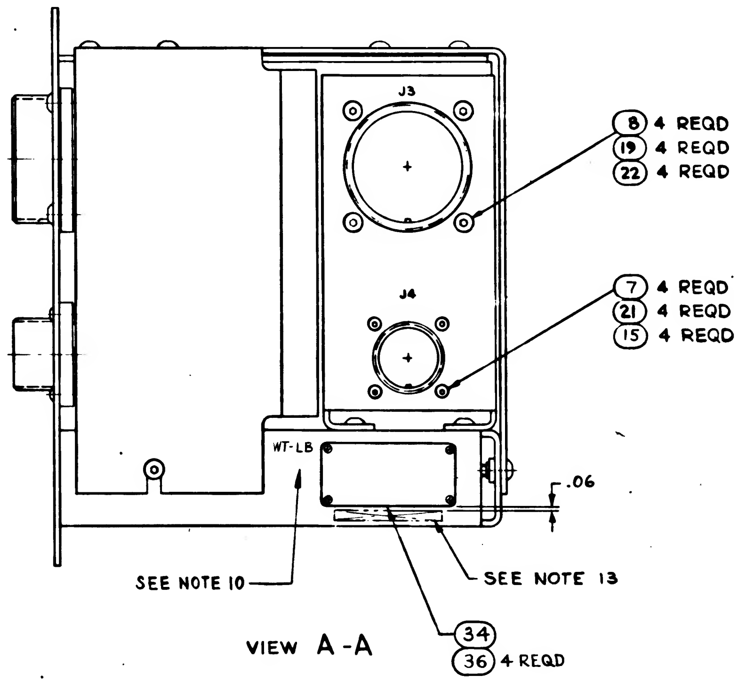
AC POWER PROTECTION
PANEL ASSEMBLY

CODE IDENT NO. SIZE E 1900075
SCALE FULL SHEET 1 OF 2

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD |
| D | | (1) THIS SHEET ADDED<br>TDRR [illegible] | MXC-187321 | 18-JUNE-63 | M.G.<br>J.E.G. |
| E | | (1) CHANGE IN ACCORDANCE WITH MXC-187702 | — | 26-JULY-63 | M.G. |
| G | | CHANGE IN ACCORDANCE WITH MXC-188671 | | 18 SEP 63 | A.N. |
| J | | CHANGE IN ACCORDANCE WITH MXC 190.18<br>TDRR 04583 | | 2-OCT-63<br>12 NOV 63 | P.E. |
| L | | CHANGE IN ACCORDANCE WITH MXC-190927 | | 3 DEC 63 | |
| M | | CHANGE IN ACCORDANCE WITH MXC- 91568 | | 20 DEC 63 | |
| N | | CHANGE IN ACCORDANCE WITH CM 193505 PER TDRR 06748 | | 24 JAN 64<br>3-10-64 | |
| R | | CHANGE IN ACCORDANCE WITH CM 195339 PER TDRR 08839 | | 25 MAR 64 | |
| U | | REPLACED WITH CHANGE BY REV. V PER CM196960<br>REVISED PER TDR 08841 | | 11 MAY 64 | |



SECTION A-A



VIEW A-A

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01799 DATE 2 July 63

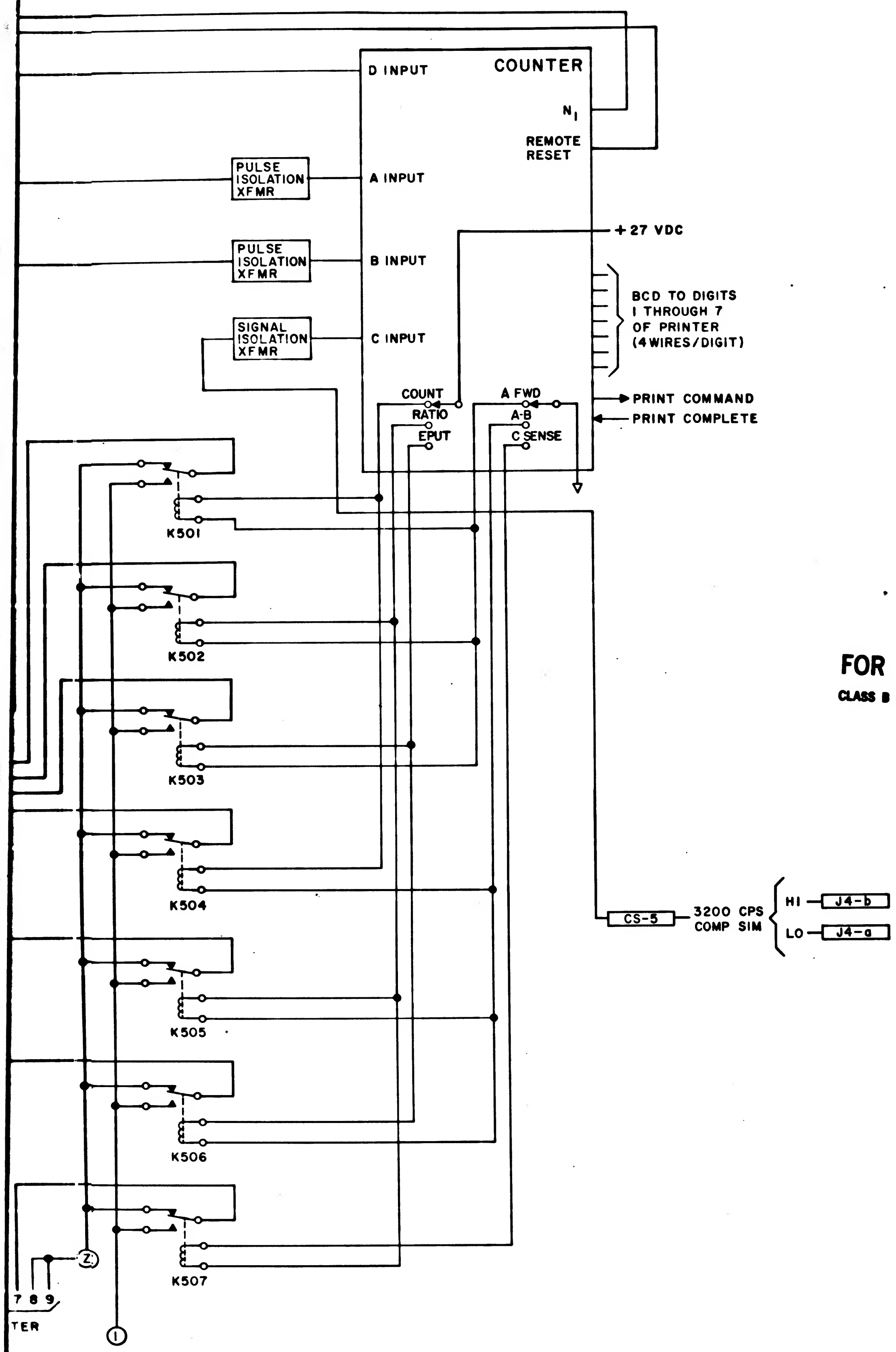
Ⓤ REPLACED WITH CHANGE BY REV V

Ⓓ THIS SHEET ADDED

| | | |
|---|---|---|
| UNLESS OTHERWISE SPECIFIED<br>DIMENSIONS ARE IN INCHES<br>TOLERANCES ON<br>FRACTIONS ± — DECIMALS ± — ANGLES ± — | AC SPARK PLUG DIVISION, GMC<br>MILWAUKEE, WISCONSIN | MANNED<br>SPACECRAFT CENTER<br>HOUSTON, TEXAS |
| | ACSP PN | |
| | DRAWN A.J. FLUDER DATE 12-APR-63 | AC POWER PROTECTION<br>PANEL ASSEMBLY |
| | CHECKED KONSLER 15-APR-63 | |
| | APPROVAL GIBBONS 15-APR-63 | |
| DO NOT SCALE THIS DRAWING | APPROVAL | |
| MATERIAL — | NASA APPROVAL 7/2/63 | CODE IDENT NO. — SIZE E — 1900075 |
| CONTRACT NAS 9-497 | MIT APPROVAL 2 July 63 | SCALE FULL — SHEET 2 OF 2 |

1900075 U B

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| A₁ | | Ⓐ₁ COMPLETELY REVISED | D.O.51572 | 16 MAY 63 | A.N. |



DIGIT 8
FUNCTION SELECT
CODING SCHEME

| | A FWD | A-B | C SENSE |
|---|---|---|---|
| COUNT | 1 | 4 | |
| RATIO | 2 | 5 | 7 |
| EPUT | 3 | 6 | |

**FOR INFORMATION ONLY**
CLASS B RELEASE TDR No. 01472 DATE 5 June 63

1900077
A

| | |
|---|---|
| 1900030-011 | 1900030-011 |
| NEXT ASSY | USED ON |
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

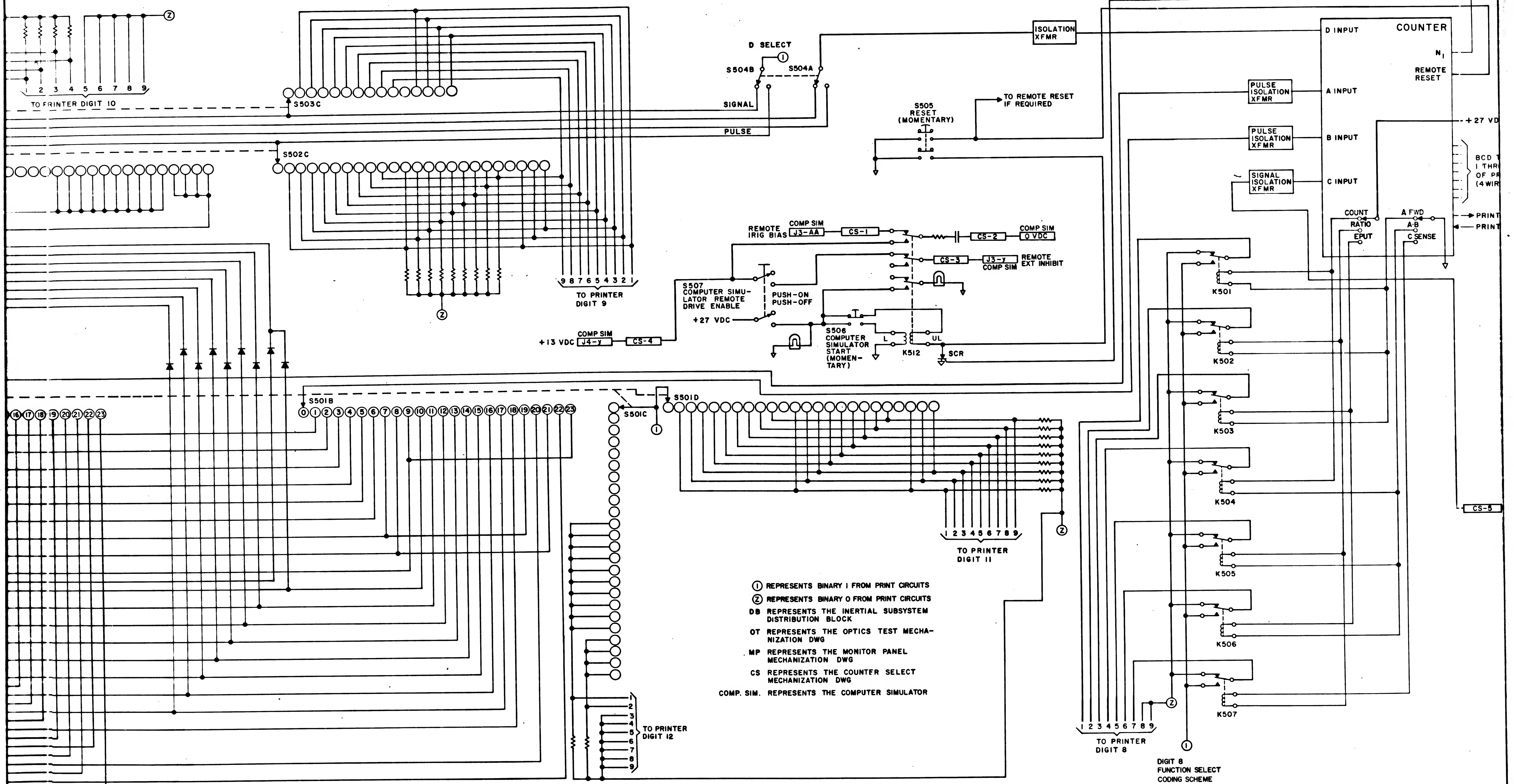
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 27 APR 63
CHECKED A.A. REICH 25 APR 63
APPROVAL 2 May 63
APPROVAL 2 May 63
NASA APPROVAL 6/5/63
T. Gilmore 6/4/63
MIT APPROVAL 5 Jun 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

GSE COUNTER SIGNAL
SELECT MECHANIZATION

CODE IDENT NO.
SIZE J₂
1900077
SCALE
SHEET

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY



Ⓘ REPRESENTS BINARY 1 FROM PRINT CIRCUITS

Ⓩ REPRESENTS BINARY 0 FROM PRINT CIRCUITS

DB REPRESENTS THE INERTIAL SUBSYSTEM DISTRIBUTION BLOCK

OT REPRESENTS THE OPTICS TEST MECHANIZATION DWG

MP REPRESENTS THE MONITOR PANEL MECHANIZATION DWG

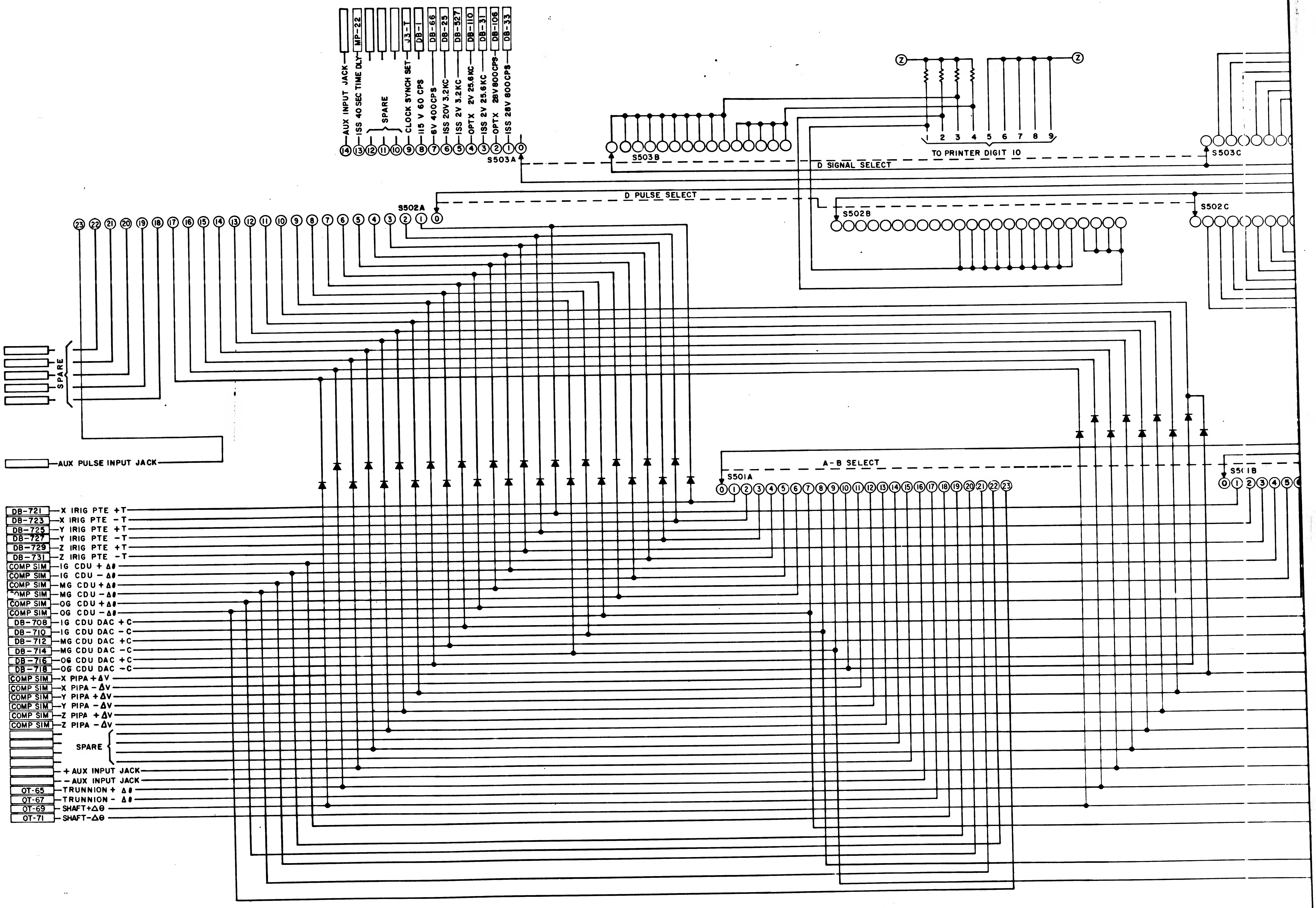
CS REPRESENTS THE COUNTER SELECT MECHANIZATION DWG

COMP. SIM. REPRESENTS THE COMPUTER SIMULATOR

DIGIT 8
FUNCTION SELECT
CODING SCHEME

| | A FWD | A-B | C SENSE |
|---|---|---|---|
| COUNT | 1 | 4 | |
| RATIO | 2 | 5 | 7 |
| EPUT | 3 | 6 | |

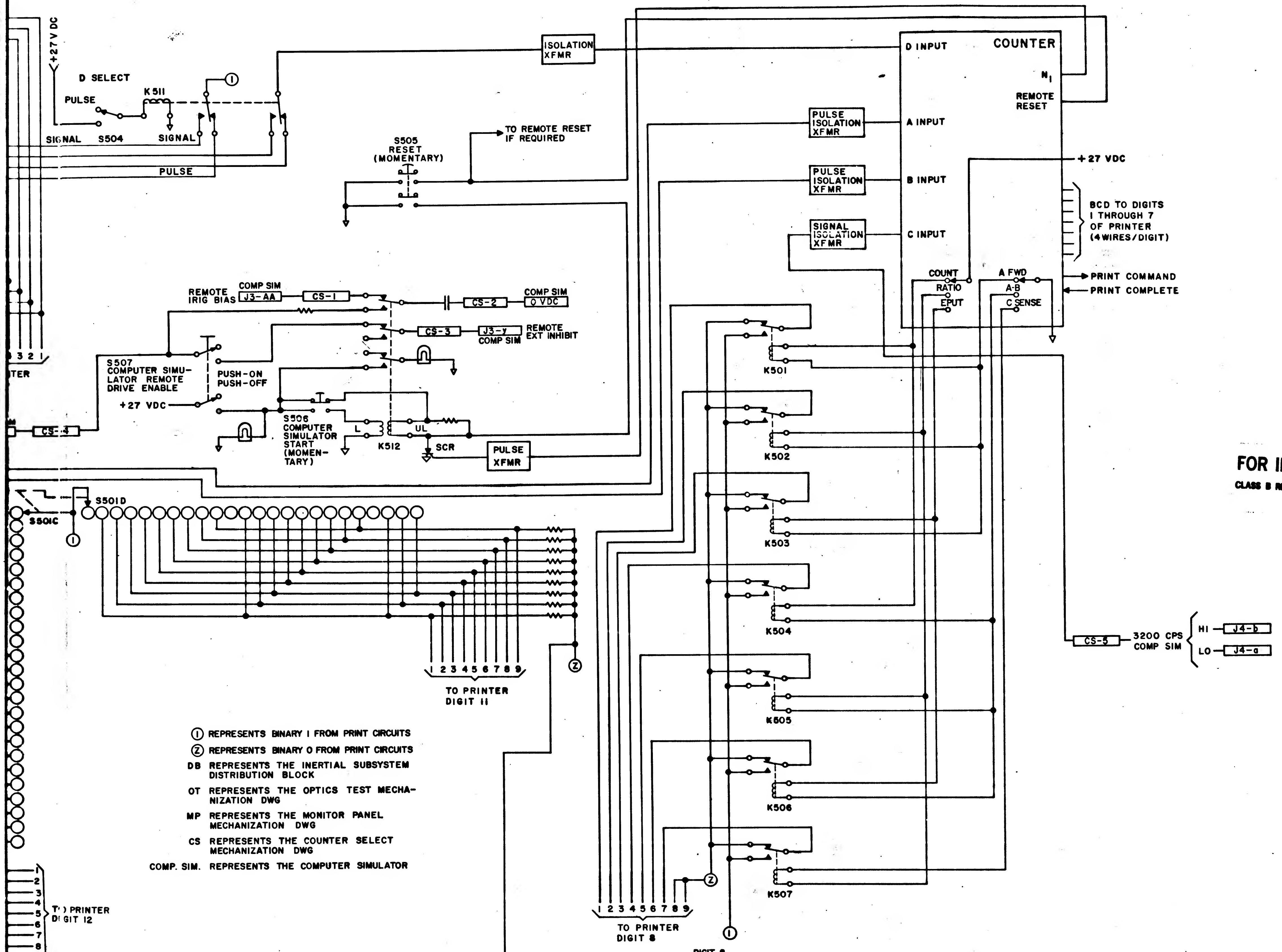
1900077



1900077

INCHES
PHOTOGRAPHIC SCALE ONLY

| S-V | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
|---|---|---|---|---|---|
| A1 | | (A1) COMPLETELY REVISED | D.O.51572 | 16 MAY 63 | A.N. |
| B | | CHANGE IN ACCORDANCE WITH MYC-190556 | — | 63 | |
| C | | CHANGE IN ACCORDANCE MXC 191347 TRR 0498T | | 28 OCT 63 | PHG |



① REPRESENTS BINARY 1 FROM PRINT CIRCUITS
② REPRESENTS BINARY 0 FROM PRINT CIRCUITS
DB REPRESENTS THE INERTIAL SUBSYSTEM DISTRIBUTION BLOCK
OT REPRESENTS THE OPTICS TEST MECHANIZATION DWG
MP REPRESENTS THE MONITOR PANEL MECHANIZATION DWG
CS REPRESENTS THE COUNTER SELECT MECHANIZATION DWG
COMP. SIM. REPRESENTS THE COMPUTER SIMULATOR

DIGIT 8
FUNCTION SELECT
CODING SCHEME

| | A FWD | A-B | C SENSE |
|---|---|---|---|
| COUNT | 1 | 4 | |
| RATIO | 2 | 5 | 7 |
| EPUT | 3 | 6 | |

**FOR INFORMATION ONLY**
CLASS B RELEASE TDR No. 21472 DATE 5 June 63

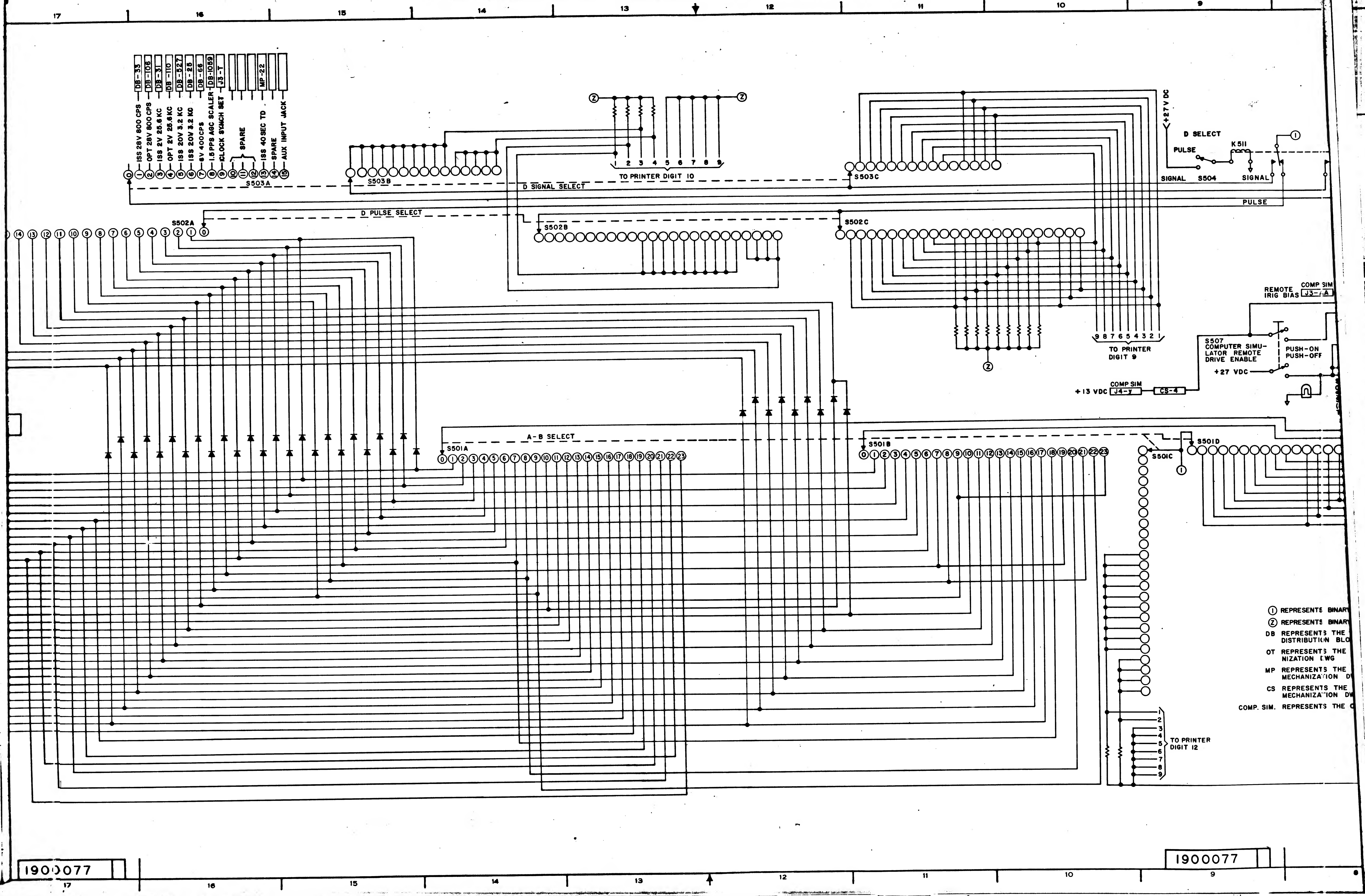
1900077
C

| | | | |
|---|---|---|---|
| UNLESS OTHERWISE SPECIFIED<br>DIMENSIONS ARE IN INCHES<br>TOLERANCES ON<br>FRACTIONS DECIMALS ANGLES<br>DO NOT SCALE THIS DRAWING | AC SPARK PLUG DIVISION, GMC<br>MILWAUKEE WISCONSIN<br>ACSP PN<br>DRAWN R.H. Decker DATE 27 APR 63<br>CHECKED A.A. REICH 25 APR 63<br>APPROVAL 2 May 63<br>APPROVAL 2 May 63 | MANNED SPACECRAFT CENTER<br>HOUSTON TEXAS | GSE COUNTER SIGNAL SELECT MECHANIZATION |
| MATERIAL | NASA APPROVAL 6/5/63<br>T. Gilmore 6/4/63<br>MIT APPROVAL 5 Jun 63 | CODE IDENT NO | SIZE J3 — 1900077 |
| CONTRACT | | SCALE — | SHEET — |

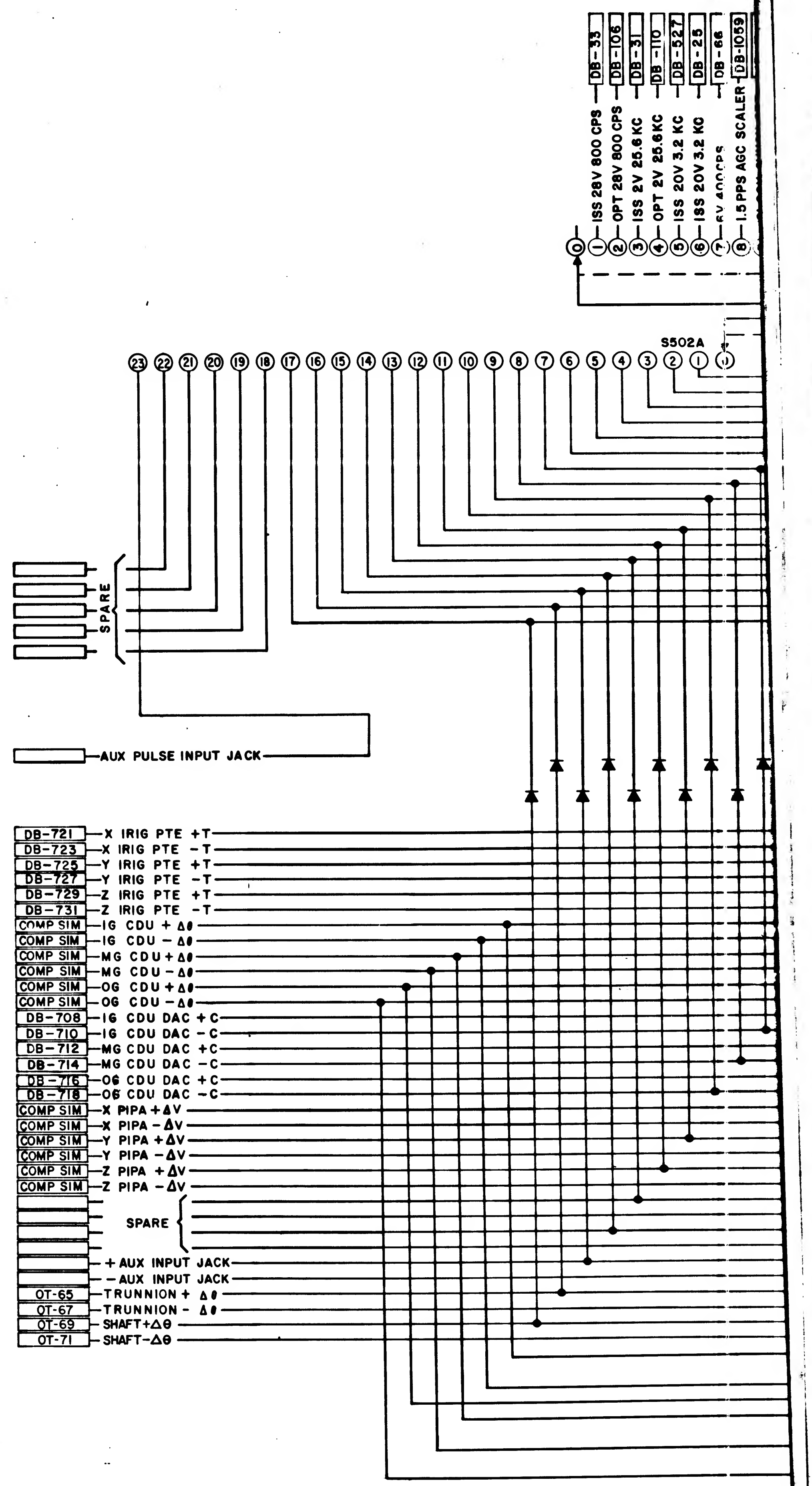
| NEXT ASSY | USED ON |
|---|---|
| 1900030-011 | 1900030-011 |

APPLICATION

1900077



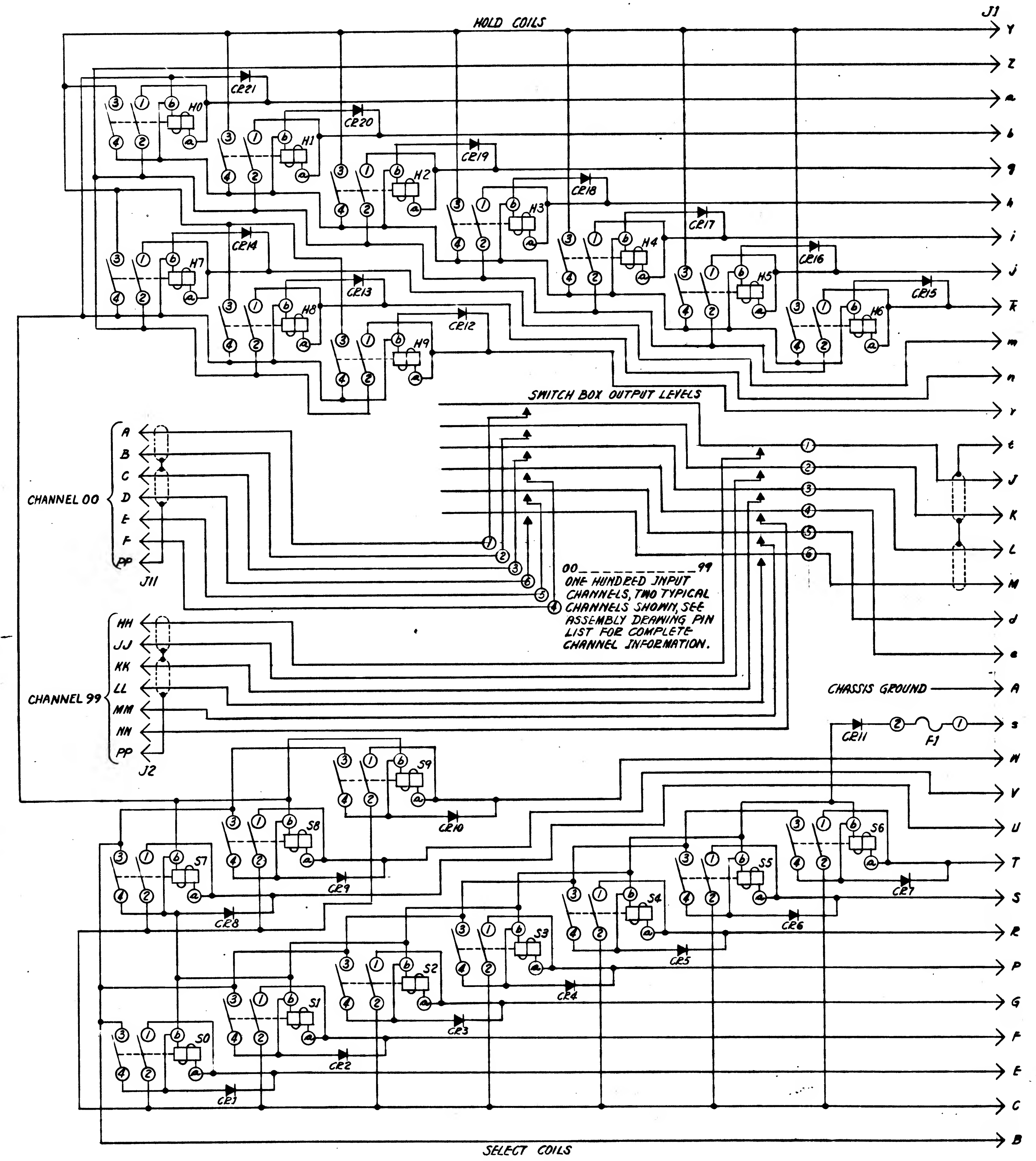
INCHES
PHOTOGRAPHIC SCALE ONLY



1900077

INCHES
PHOTOGRAPHIC SCALE ONLY

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
| A₁ | A-1 | Ⓐ IN TITLE: "SWITCH, CROSSBAR" WAS "SWITCH, BOX". | MXC-186875 | 7 JUN 63 | RM<br>A.A.R. |



00_________99
ONE HUNDRED INPUT CHANNELS, TWO TYPICAL CHANNELS SHOWN, SEE ASSEMBLY DRAWING PIN LIST FOR COMPLETE CHANNEL INFORMATION.

DRAWINGS FOR REFERENCE:
ASSEMBLY DRAWING 1900061

**FOR INFORMATION ONLY**

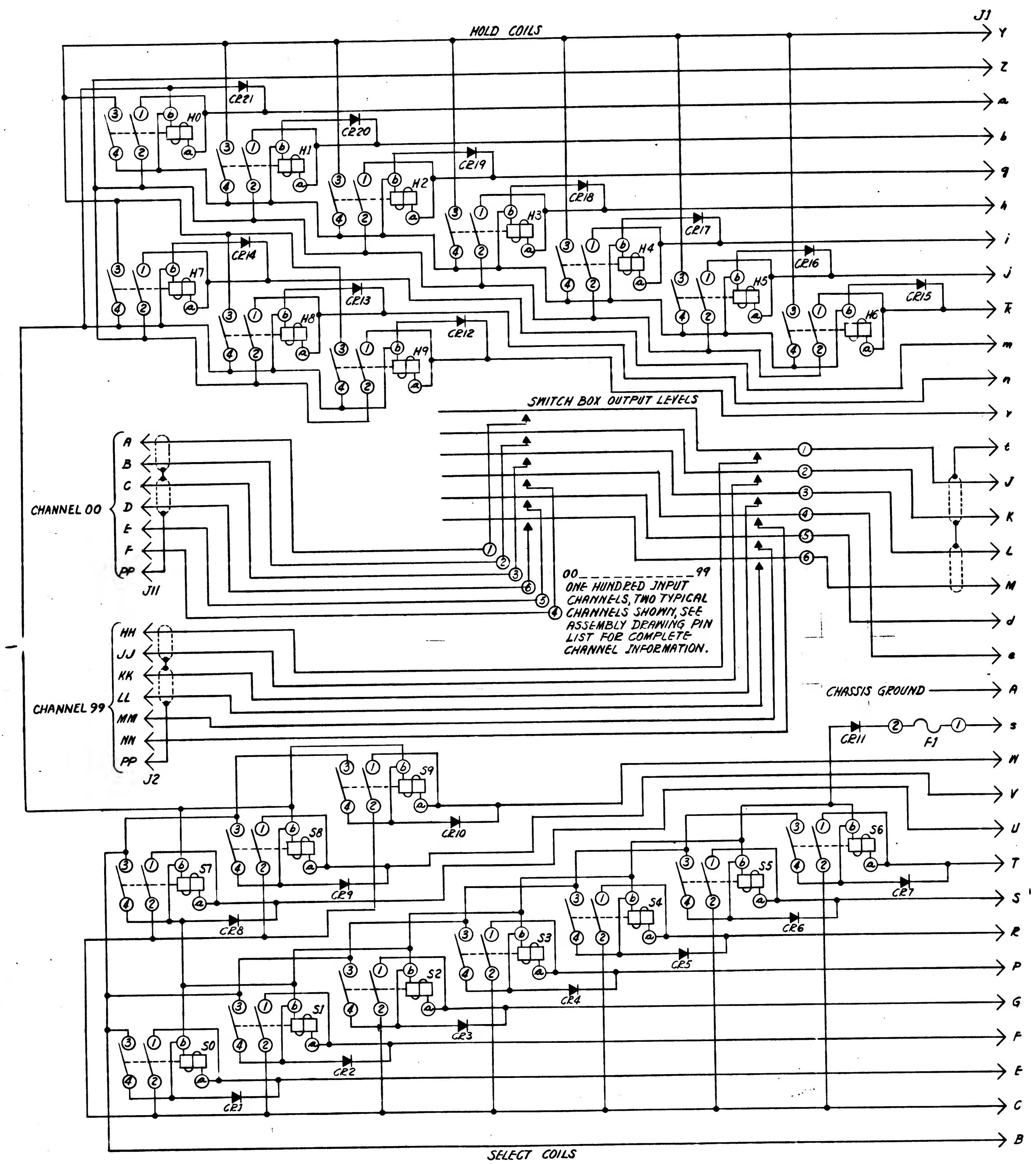
**CLASS B RELEASE TDR No.** 02465 **DATE** 7 Aug 63

| | | | | |
|---|---|---|---|---|
| 1900061 | 1900048 | UNLESS OTHERWISE SPECIFIED<br>DIMENSIONS ARE IN INCHES<br>TOLERANCES ON<br>FRACTIONS DECIMALS ANGLES<br>± ± ±<br>DO NOT SCALE THIS DRAWING | AC SPARK PLUG DIVISION, GMC<br>MILWAUKEE, WISCONSIN<br>ACSP PN<br>DRAWN E. LITZOW DATE 23 APR 63<br>CHECKED W. Diehl 20 APR 63<br>APPROVAL<br>APPROVAL | MANNED<br>SPACECRAFT CENTER<br>HOUSTON, TEXAS<br>SWITCH, CROSSBAR<br>SCHEMATIC DIAGRAM ELECTRICAL |
| NEXT ASSY | USED ON | MATERIAL | NASA APPROVAL 8/7/63 | CODE IDENT NO<br>SIZE E<br>1900078 |
| APPLICATION | | CONTRACT NAS9-497 | MIT APPROVAL | SCALE<br>SHEET |

1900078

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD |
|---|---|---|---|---|---|
| A₁ | A-1 | Ⓐ₁ IN TITLE: "SWITCH, CROSSBAR" WAS "SWITCH, BOX". | MXC-186875 | 7 JUN 63 | RM A.A.R. |
| B | | REPLACED WITH CHANGE BY REV. C PER TDRR 15994 | — | 9-FEB-65 | |



00 _ _ _ _ _ _ _ _ _ _ 99
ONE HUNDRED INPUT CHANNELS, TWO TYPICAL CHANNELS SHOWN, SEE ASSEMBLY DRAWING PIN LIST FOR COMPLETE CHANNEL INFORMATION.

DRAWINGS FOR REFERENCE:
ASSEMBLY DRAWING 1900061

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 02465 DATE 7 Aug 63

Ⓑ REPLACED WITH CHANGE BY REV C

| | | | |
|---|---|---|---|
| 1900061 | 1900048 | UNLESS OTHERWISE SPECIFIED<br>DIMENSIONS ARE IN INCHES<br>TOLERANCES ON<br>FRACTIONS DECIMALS ANGLES<br>SCALE THIS DRAWING<br>MATL | AC SPARK PLUG DIVISION, GMC<br>MILWAUKEE, WISCONSIN |
| NEXT ASSY | USED ON | | ACSP PN |
| APPLICATION | | CONTRACT NAS9-497 | DRAWN E. LITZOW DATE 23 APRIL 63<br>CHECKED W. Diehl 30 APR 63<br>APPROVAL<br>APPROVAL 6 Aug 63<br>NASA APPROVAL 8/7/63<br>MIT APPROVAL |

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

SWITCH, CROSSBAR
SCHEMATIC DIAGRAM ELECTRICAL

CODE IDENT NO.
SIZE E
1900078
SCALE —
SHEET

1900078

B 1900079

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
| A | | CHANGE IN ACCORDANCE WITH MXC-186470 | MXC-186470 | 23-MAY-63 | M. G. |
| A1 | | CHANGE IN ACCORDANCE WITH MXC-186533 | MXC-186533 | | |
| A2 | | CHANGE IN ACCORDANCE WITH MXC-186593 | MXC-186593 | | |
| A3 | | CHANGE IN ACCORDANCE WITH MXC-186927 | | 3 JUN 63 | |
| A4 | | CHANGE IN ACCORDANCE WITH MXC-187053 | | 10 June '63 | TJS<br>G.A.R. |
| B | | INCORPORATES REV. A THRU A4 PER TDRR 01704 | | 26 June '63 | |

PICTURE INCOMPLETE

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01211 DATE 8 May 63

| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | 1 | | | 1015910 | TRANSFORMER-PWR, STEP-UP |
| | | | 1 | | | 1015911 | TRANSFORMER-PWR, STEP DOWN |
| | | | 1 | | | 1015898-014 | TRANSFORMER, AUDIO |
| | | | 1 | | | RC20GF750J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RC20GF473J | RESISTOR (MIL-R-11) |
| | | | 1 | | | CL25BG351UP3 | CAPACITOR (MIL-C-3965) |
| | | | 1 | | | 1015841-6 | REACTOR, VARIABLE |
| | | | 1 | | | 1015936-002 | TRANSISTOR (2N1724) (MATCHED PAIR) |
| | | | 4 | | | 1015938 | TRANSISTOR (2N2193) |
| | | | 2 | | | 1015935-001 | TRANSISTOR (2N930) |
| | | | 1 | | | 1015941-013 | SEMICONDUCTOR DEVICE, DIODE |
| | | | 4 | | | 1N486B | SEMICONDUCTOR DEVICE, DIODE (MIL-S-19500) |

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | 2 | | | CS13AC470K | CAPACITOR (MIL-C-26655) |
| | | | 1 | | | CS13AE4R7K | CAPACITOR (MIL-C-26655) |
| | | | 1 | | | CH05A1MC474K | CAPACITOR (MIL-C-25) |
| | | | 1 | | | CH05A1MV405K | CAPACITOR (MIL-C-25) |
| | | | 2 | | | CS13AF6R8K | CAPACITOR (MIL-C-26655) |
| | | | 1 | | | RN65C1500F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RN65C3921F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RN65C2002F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RN65C2000F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RT12C2L103 | RESISTOR (MIL-R-27208) |
| | | | 1 | | | RC20GF391J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RC42GF360J | RESISTOR (MIL-R-11) |
| | | | 2 | | | RC20GF511J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RC32GF182J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RN65C5110F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RN65C2001F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RN65C1001F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RN65C1302F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RC20GF472J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RC20GF103J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RC20GF333J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RC20GF302J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RC20GF202J | RESISTOR (MIL-R-11) |

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900060-011 | 1900004 | -011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN A. J. Fluker DATE 23-APR-63
24 APR 63
CHECKED
APPROVAL 25 APR 63
APPROVAL 25 APR 63
NASA APPROVAL 5/8/63
L. Gedman 5/8/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

POWER SUPPLY
6V, 400 CYCLE, 6A, ASSEMBLY

CODE IDENT NO. SIZE D 1900079
SCALE — SHEET

INCHES 0 1 2
PHOTOGRAPHIC SCALE ONLY

C | 1900079 | 2

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
| A | | CHANGE IN ACCORDANCE WITH MXC-186470 | MXC-186470 | 23-MAY-63 | M G. |
| A1 | | CHANGE IN ACCORDANCE WITH MXC-186533 | MXC-186533 | | |
| A2 | | CHANGE IN ACCORDANCE WITH MXC-186593 | MXC-186593 | | |
| A3 | | CHANGE IN ACCORDANCE WITH MXC-186927 | | 3 JUN 63 | |
| A4 | | CHANGE IN ACCORDANCE WITH MXC-187053 | | 10 June '63 | TJS G.A.R. |
| B | | INCORPORATES REV. A THRU A4 PER TDRR 01704 | | 26 June '63 | |
| B1 | | CHANGE IN ACCORDANCE WITH MXC-187226 | MXC 187226 | 5 JUL 63 | |
| C | | REPLACED WITH CHANGE BY REVISION D TDRR 02578 | MXC 188342 | 29 JUL 63 | C.A.M. |

PICTURE INCOMPLETE

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01211 DATE 8 May 63

Ⓒ REPLACED WITH CHANGE BY REV D

| QUANTITY REQUIRED | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| | | | 4 | | | 1015872-1 | HEAT SINK |
| | | | 1 | | | 1015871-1 | HEAT SINK |
| | | | 2 | | | CS13AB470K | (1896954-058) CAPACITOR (MIL-C-26655) |
| | | | 1 | | | CS13AE4R7K | CAPACITOR (MIL-C-26655) |
| | | | 1 | | | CH05A1MC474K | CAPACITOR (MIL-C-25) |
| | | | 1 | | | CH05A1MV405K | CAPACITOR (MIL-C-25) |
| | | | 2 | | | CS13AF6R8K | CAPACITOR (MIL-C-26655) |
| | | | 1 | | | RN65C1500F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RN65C3921F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RN65C2002F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RN65C2000F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RT12C2L103 | RESISTOR (MIL-R-27208) |
| | | | 1 | | | RC20GF391J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RC42GF360J | RESISTOR (MIL-R-11) |
| | | | 2 | | | RC20GF511J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RC32GF182J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RN65C5110F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RN65C2001F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RN65C1001F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RN65C1302F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RC20GF472J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RC20GF103J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RC20GF333J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RC20GF302J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RC20GF202J | RESISTOR (MIL-R-11) |

LIST OF PARTS AND MATERIALS

| QUANTITY REQUIRED | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| | | | 1 | | | 1015910 | TRANSFORMER-PWR, STEP-UP |
| | | | 1 | | | 1015911 | TRANSFORMER-PWR, STEP DOWN |
| | | | 1 | | | 1015898-014 | TRANSFORMER, AUDIO |
| | | | 1 | | | RC20GF750J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RC20GF473J | RESISTOR (MIL-R-11) |
| | | | 1 | | | CL25BG351UP3 | CAPACITOR (MIL-C-3965) |
| | | | 1 | | | 1015841-6 | REACTOR, VARIABLE |
| | | | 1 | | | 1015936-002 | TRANSISTOR (2N1724) (MATCHED PAIR) |
| | | | 4 | | | 1015938 | TRANSISTOR (2N2193) |
| | | | 2 | | | 1015935-001 | TRANSISTOR (2N930) |
| | | | 1 | | | 1015941-013 | SEMICONDUCTOR DEVICE, DIODE |
| | | | 4 | | | 1N486B | SEMICONDUCTOR DEVICE, DIODE (MIL-S-19500) |

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900060-011 | 1900004 | -011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± — ± — ± —
DO NOT SCALE THIS DRAWING
MATERIAL ———
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN A. J. Fuller DATE 23-APR-63
Mal Rowden 24 APR 63
CHECKED
APPROVAL 25-APR 63
APPROVAL 25 APR 63
NASA APPROVAL 5/8/63
L. Gedeman 5/8/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

POWER SUPPLY
6 V, 400 CYCLE, 6A, ASSEMBLY

CODE IDENT NO.
SIZE D
1900079
SCALE ——— B1 SHEET

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1900079

| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD. |
|---|---|---|---|---|---|
| | | | | | |

REVISIONS

PICTURE INCOMPLETE

**FOR INFORMATION ONLY**

**CLASS B RELEASE TDR No.** 01211 **DATE** 8 May 63

| QUANTITY REQUIRED | | | | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | 011 | | | | |
| | | | 2 | | | CS15BC470K | CAFACITOR (MIL-C-26655) |
| | | | 1 | | | CS15BE4R7K | CAPACITOR (MIL-C-26655) |
| | | | 1 | | | CP09A1KB274K3 | CAPACITOR (MIL-C-25) |
| | | | 1 | | | CH03A1NG205K | CAPACITOR (MIL-C-18312) |
| | | | 2 | | | CS15BF6R8K | CAPACITOR (MIL-C-26655) |
| | | | 1 | | | RN651500F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RN653921F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RN652002F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RN652000F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RT12C2L103 | RESISTOR (MIL-R-27208) |
| | | | 1 | | | RC20GF101J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RC42GF360J | RESISTOR (MIL-R-11) |
| | | | 2 | | | RC20GF511J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RC20GF182J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RN65C5110F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RN65C2001F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RN65C1001F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RN65C1302F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RC20GF472J | RESISTOR (MIL-R-11) |
| | | | 2 | | | RC20GF103J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RC20GF333J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RC20GF302J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RC20GF202J | RESISTOR (MIL-R-11) |

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900060-011 | 1900004 | -011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —

DO NOT SCALE THIS DRAWING

MATERIAL —

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN A. J. Fluder DATE 23-APR-63
24 APR 63
CHECKED
APPROVAL 25-APR-63
APPROVAL 25 APR 63

NASA APPROVAL 5/8/63
L Gedeman 5/8/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

POWER SUPPLY
6 V, 400 CYCLE, 6A, ASSEMBLY

CODE IDENT NO. SIZE D 1900079

SCALE — SHEET

MIL 1075D-F

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

A4 1900081

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
|---|---|---|---|---|---|
| A | | CHANGE IN ACCORDANCE WITH MXC 186471 | | 23 MAY 63 | MTY CJP |
| A-1 | | CHANGE IN ACCORDANCE WITH MXC 186534 | | 23 MAY 63 | MTY CJP |
| A-2 | | CHANGE IN ACCORDANCE WITH MXC 186594 | | 23 MAY 63 | MTY CJP |
| A3 | | CHANGE IN ACCORDANCE WITH MXC 186928 | | 5 JUN 63 | JHH EF |
| A4 | | CHANGE IN ACCORDANCE WITH MXC 187090 | | 5 JUN 63 | JHH EF |
| B | | INCORPORATES CHANGES "A" THRU "A4" PER TDR NO. 01705 | | 26 JUNE 63 | WK |

(M)

PICTURE INCOMPLETE

**FOR INFORMATION ONLY**

**CLASS B RELEASE TDR No.** 01211 **DATE** 8 May 63

| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | 1 | | | 1015909 | TRANSFORMER, OUTPUT |
| | | | | | | | |
| | | | | | | | |
| | | | 1 | | | CS13AE470K | CAPACITOR (MIL-C-26655) |
| | | | 1 | | | 1015930-002 | TRANSISTOR 2N2151 (MATCHED PAIR) |
| | | | 1 | | | 1015899 | REACTOR, FILTER |
| | | | 1 | | | 1015898-10 | OUTPUT TRANSFORMER |
| | | | 1 | | | 1015900 | POWER TRANSFORMER |
| | | | 1 | | | 1015841-4 | REACTOR, VARIABLE |
| | | | 4 | | | 1015938 | TRANSISTOR, 2N1613 |
| | | | 1 | | | RC20GF620J | RESISTOR (MIL-R-11) |
| | | | 2 | | | 1015935-001 | TRANSISTOR, 2N930 |
| | | | 4 | | | 1015937-001 | SEMICONDUCTOR DEVICE, DIODE |
| | | | 4 | | | 1N486B | SEMICOND. DEVICE, DIO (MIL-S-19500) |
| | | | 1 | | | 1015941-013 | SEMICONDUCTOR DEVICE, DIODE |
| | | | 1 | | | 1015939-011 | SEMICONDUCTOR DEVICE, DIODE |
| | | | 1 | | | RC20GF333J | RESISTOR (MIL-R-11) |
| QUANTITY REQUIRED | | | | | | LIST OF PARTS AND MATERIALS | |

| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | 1 | | | CE41C451G | CAPACITOR (MIL-C-62) |
| | | | 4 | | | CS13AE010K | CAPACITOR (MIL-C-26655) |
| | | | 1 | | | CP09A1KC333K3 | CAPACITOR (MIL-C-25) |
| | | | 1 | | | CP09A1KB274K3 | CAPACITOR (MIL-C-25) |
| | | | 1 | | | CS13AF2R2K | CAPACITOR (MIL-C-26655) |
| | | | 1 | | | RN65C6191F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RN65C1501F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RN65C3322F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RN65C8251F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RC42GF680J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RC42GF122J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RT12C2L103 | RESISTOR (MIL-R-27208 |
| | | | 1 | | | RC20GF101J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RC20GF200J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RC32GF182J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RN65C2001F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RN65C2002F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RN65C5000F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RN65C7502F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RC20GF472J | RESISTOR (MIL-R-11) |
| | | | 3 | | | RC20GF103J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RC20GF333J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RC20GF302J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RC20GF202J | RESISTOR (MIL-R-11) |
| QUANTITY REQUIRED | | | | | | LIST OF PARTS AND MATERIALS | |

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900060-011 | 1900004 | 011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ —— + —— + ——
- —— - —— - ——
DO NOT SCALE THIS DRAWING
MATERIAL ——
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN A. J. Fuder DATE 24 APR 63
CHECKED Male Kowski 24 APR 63
APPROVAL H. Hugh Williams 4 APR 63
APPROVAL A. Hodel 24 APR 63
NASA APPROVAL 5/8/63
L. Gediman May 8, 1963
MIT APPROVAL 8 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

POWER SUPPLY
2 VOLT, 3200 CYCLES, 3 AMPERE
ASSEMBLY

CODE IDENT NO.
SIZE D
1900081
SCALE ——
SHEET

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

MIL 1075D-F

D 1800061 2

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
|---|---|---|---|---|---|
| A | | CHANGE IN ACCORDANCE WITH MXC 186471 | | 23 MAY 63 | CFP |
| A-1 | | CHANGE IN ACCORDANCE WITH MXC 186534 | | 23 MAY 63 | CFP |
| A-2 | | CHANGE IN ACCORDANCE WITH MXC 186594 | | 23 MAY 63 | CFP |
| A3 | | CHANGE IN ACCORDANCE WITH MXC 186928 | | 5 JUN 63 | JHH |
| A4 | | CHANGE IN ACCORDANCE WITH MXC 187090 | | 5 JUN 63 | JHH |
| B | | INCORPORATES CHANGES "A" THRU "A4" PER TDR NO. 01705 | | 26 JUNE 63 | WK |
| B1 | | CHANGE IN ACCORDANCE WITH MXC 187133 | | 5 JUL 63 | |
| B2 | | CHANGE IN ACCORDANCE WITH MXC 187227 | | 5 JUL 63 | |
| C | | REPLACED WITH CHANGE BY REVISION "D" PER MXC 188343 | TDRR B2-576 WK | 29 JUL 63 | C.A.M. |

PICTURE INCOMPLETE

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01211 DATE 8 May 63

Ⓒ **REPLACED WITH CHANGE BY REV D**

| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | 1 | | | 1015909 | TRANSFORMER, OUTPUT |
| | | | 1 | | | 1015960 | TRANSFORMER, DRIVER |
| | | | 4 | | | 1015872-001 | HEAT SINK |
| | | | 1 | | | CS13AE470K | CAPACITOR (MIL-C-26655) |
| | | | 1 | | | 1015930-002 | TRANSISTOR 2N2151 (MATCHED PAIR) |
| | | | 1 | | | 1015899 | REACTOR, FILTER |
| | | | 1 | | | 1015898-10 | OUTPUT TRANSFORMER |
| | | | 1 | | | 1015900 | POWER TRANSFORMER |
| | | | 1 | | | 1015841-4 | REACTOR, VARIABLE |
| | | | 4 | | | 1015938 | TRANSISTOR, 2N1613 |
| | | | 1 | | | RC20GF620J | RESISTOR (MIL-R-11) |
| | | | 2 | | | 1015935-001 | TRANSISTOR, 2N930 |
| | | | 4 | | | 1015937-001 | SEMICONDUCTOR DEVICE, DIODE |
| | | | 4 | | | 1N486B | SEMICOND. DEVICE, DIO (MIL-S-19500) |
| | | | 1 | | | 1015941-013 | SEMICONDUCTOR DEVICE, DIODE |
| | | | 1 | | | 1015939-011 | SEMICONDUCTOR DEVICE, DIODE |
| | | | 1 | | | RC20GF333J | RESISTOR (MIL-R-11) |

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | 1 | | | CE41C451G | CAPACITOR (MIL-C-62) |
| | | | 4 | | | CS13AF010K | (1896954-126) CAPACITOR (MIL-C-26655) |
| | | | 1 | | | CP09A1KC333K3 | CAPACITOR (MIL-C-25) |
| | | | 1 | | | CP09A1KB274K3 | CAPACITOR (MIL-C-25) |
| | | | 1 | | | CS13AF2R2K | CAPACITOR (MIL-C-26655) |
| | | | 1 | | | RN65C6191F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RN65C1501F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RN65C3322F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RN65C8251F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RC42GF680J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RC42GF122J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RT12C2L103 | RESISTOR (MIL-R-27208 |
| | | | 1 | | | RC20GF101J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RC20GF200J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RC32GF182J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RN65C2001F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RN65C2002F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RN65C5000F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RN65C7502F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RC20GF472J | RESISTOR (MIL-R-11) |
| | | | 3 | | | RC20GF103J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RC20GF333J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RC20GF302J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RC20GF202J | RESISTOR (MIL-R-11) |

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900060-011 | 1900004 | 011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN A.J. Fw— DATE 24 APR 63
CHECKED 24 APR 63
APPROVAL H. Hugh Williams 24 APR 63
APPROVAL 24 APR 63
NASA APPROVAL 5/8/63
May 8, 1963
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

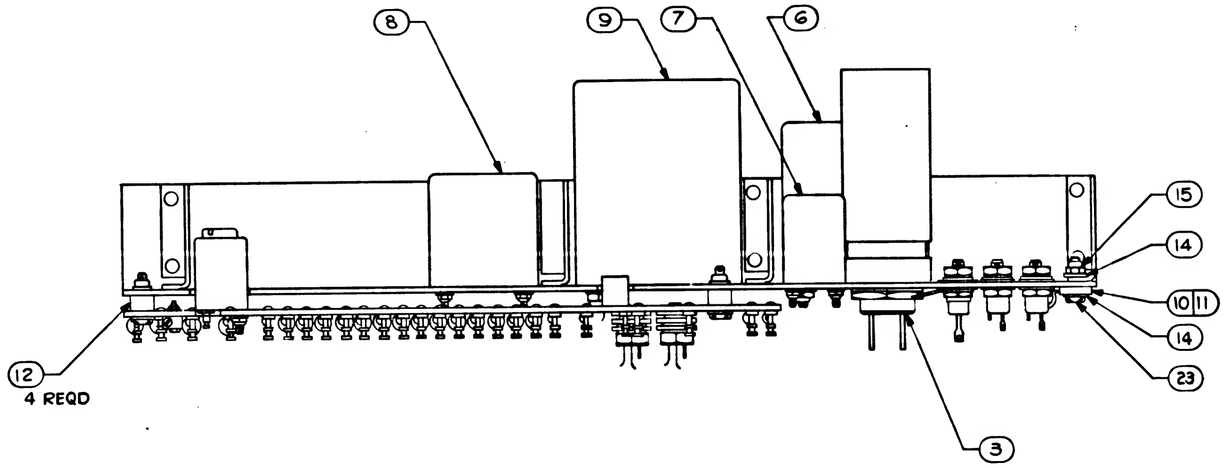
POWER SUPPLY
2 VOLT, 3200 CYCLES, 3 AMPERE
ASSEMBLY

CODE IDENT NO. SIZE D 1900081
SCALE — B2 SHEET

INCHES 0 1 2
PHOTOGRAPHIC SCALE ONLY

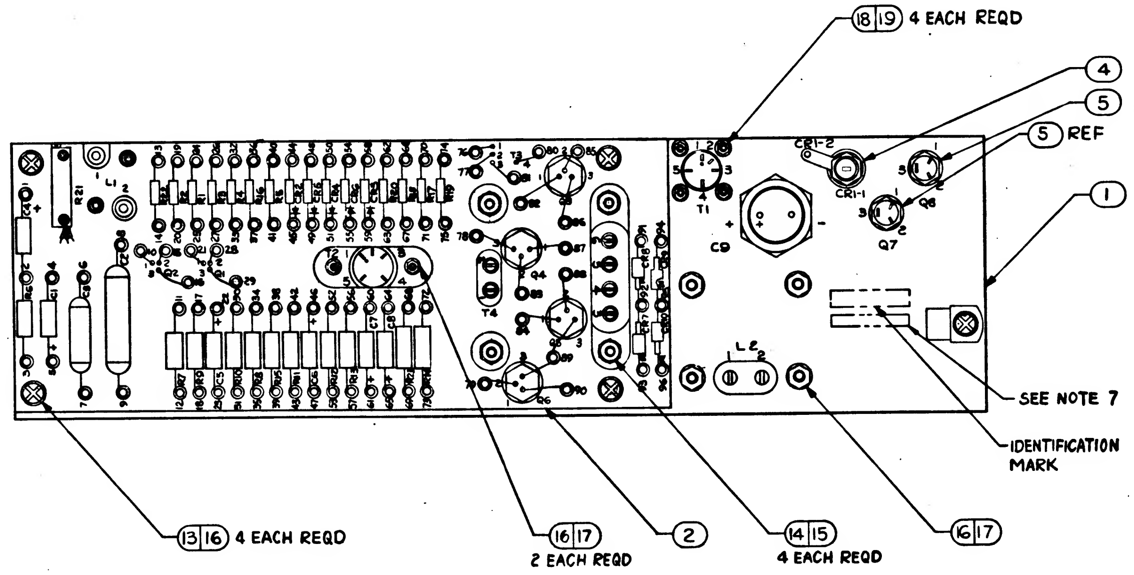
| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| D | | REPLACES REVISION C WITH CHANGE PER MYC188343 | | 20 JUL 63 | CAV |
| D | | RNT DRR 02576 | | | |

1. INTERPERT DRAWING IN ACCORDANCE WITH STANDARDS PERSCRIBED BY MIL-D-70327.
2. MUST BE FREE FROM BURRS AND SHARP EDGES.
3. SOLDER PER MIL-S-6872 USING ITEM ㉕ & ITEM ㉖ (ES-2505-1).
4. APPLY THREAD RETAINING COMPOUND USING ITEM ㉔.
5. IDENTIFY USING PART NUMBER AND REVISION LETTER PER MIL-STD-130(ES-267).
6. VENDOR ITEM- SEE SPECIFICATION CONTROL DRAWING.
7. MARK "SCHEM" & APPLICABLE SCHEMATIC DRAWING NUMBER PER ND1002019, .09 HIGH, COLOR BLACK.



**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. ____ DATE ____



Ⓓ **REPLACES REV(C) WITH CHANGE**

| | | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|---|
| | | | | AR | | 26 | MIL-F-14256<br>QQ-S-571 | FLUX (ES-2798)<br>FLUX TYPE AR (ES-2175 TYPE 1 OR 2) |
| | | | | AR | | 25 | QQ-S-571 | SOLDER SN60 (ES-2175 ALLOY 1) |
| | | | | AR | | 24 | MIL-S-40083 CL-20 | SEALING COMPOUND (ES-2544-3) |
| | | | | 1 | | 23 | MS35216-44 | SCREW, PAN HEAD |
| | | | | X | | 22 | 1900341 | SCHEMATIC DIAGRAM ELEC. |
| | | | | 1 | | 21 | | WIRE LIST AA |
| | | | | 1 | | 20 | | WIRING HARNESS |
| | | | | 4 | | 19 | AN960C4 | WASHER-FLAT |
| NOTE 6 | | | | 4 | | 18 | 1010617-004 | NUT-SELF LOCKING |
| | | | | 6 | | 17 | AN363C632 | NUT-SELF LOCKING |
| | | | | 10 | | 16 | AN960C6 | WASHER-FLAT |
| | | | | 5 | | 15 | AN363C832 | NUT-SELF LOCKING |
| | | | | 6 | | 14 | AN960C8 | WASHER-FLAT |
| | | | | 4 | | 13 | MS35216-29 | SCREW-PAN HEAD |
| | | | | 4 | | 12 | 1015860-001 | SPACER |
| | | | | 1 | | 11 | | WASHER-SADDLE |
| | | | | 1 | | 10 | | CLAMP-CABLE |
| NOTE 6 | | | | 1 | | 9 | 1015900 | TRANSFORMER-POWER |
| NOTE 6 | | | | 1 | | 8 | 1016011 | TRANSFORMER 18:1 STEP-DOWN |
| | | | | 1 | | 7 | 1015960 | TRANSFORMER 1:8 STEP-UP |
| NOTE 6 | | | | 1 | | 6 | 1015899 | REACTOR-FILTER |
| NOTE 6 | | | | 2 | | 5 | 1015930-2 | TRANSISTOR, MATCHED PAIR |
| NOTE 6 | | | | 1 | | 4 | 1015939-011 | DIODE-ZENER |
| | | | | 1 | | 3 | CE41C451G | ( ) CAPACITOR |
| | | | | 1 | | 2 | 1900402-011 | TERMINAL BOARD ASSEMBLY |
| | | | | 1 | | 1 | 1900401 | BRACKET INSEPARABLE ASSY |

QUANTITY REQUIRED

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900060-011 | 1900060-011 | -011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN [illegible] DATE 28 JUN 63
CHECKED [illegible] 28 JUN 63
APPROVAL R. Williams 17 JUL 63
APPROVAL C. Jeheman
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

POWER SUPPLY
2 VOLTS 3200 CPS
ASSEMBLY

CODE IDENT NO | SIZE E | 1900081
SCALE 1:1 | SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1. INTERPERT DRAWING IN ACCORDANCE WITH STANDARDS PERSCRIBED BY MIL-D-70327.

2. MUST BE FREE FROM BURRS AND SHARP EDGES.

3. SOLDER PER MIL-S-440 USING ITEM (25) & ITEM (26)

4. APPLY THREAD RETAINING COMPOUND USING ITEM (24).

5. IDENTIFY USING DRAWING NO. PREFIXED BY "ASSY" WITH APPLICABLE DASH NO. & REVISION LETTER PER MIL-STD-130 (ES-267).

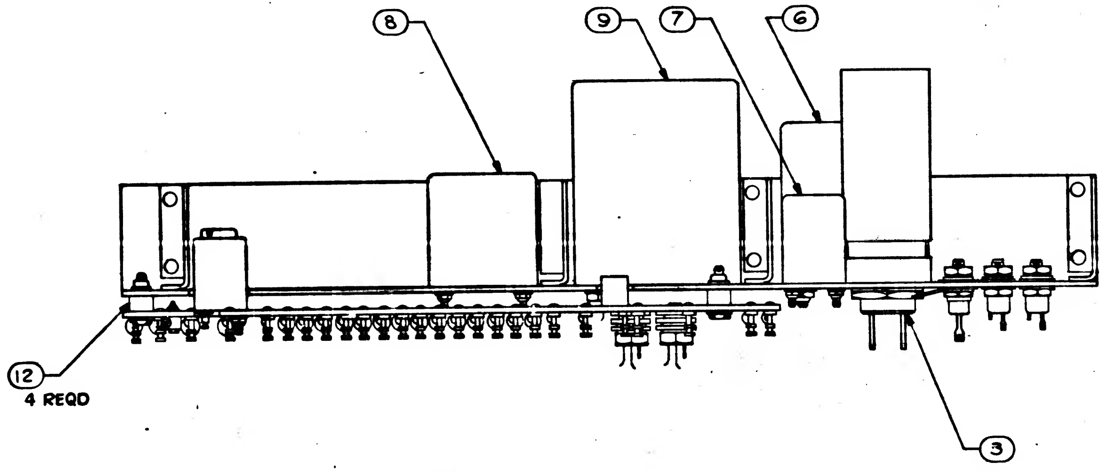
6. VENDOR ITEM- SEE SPECIFICATION CONTROL DRAWING.

7. MARK "SCHEM" & APPLICABLE SCHEMATIC DRAWING NUMBER PER ND1002019, .09 HIGH, COLOR BLACK.

8. SERIALIZE PER ND1002023

REVISIONS

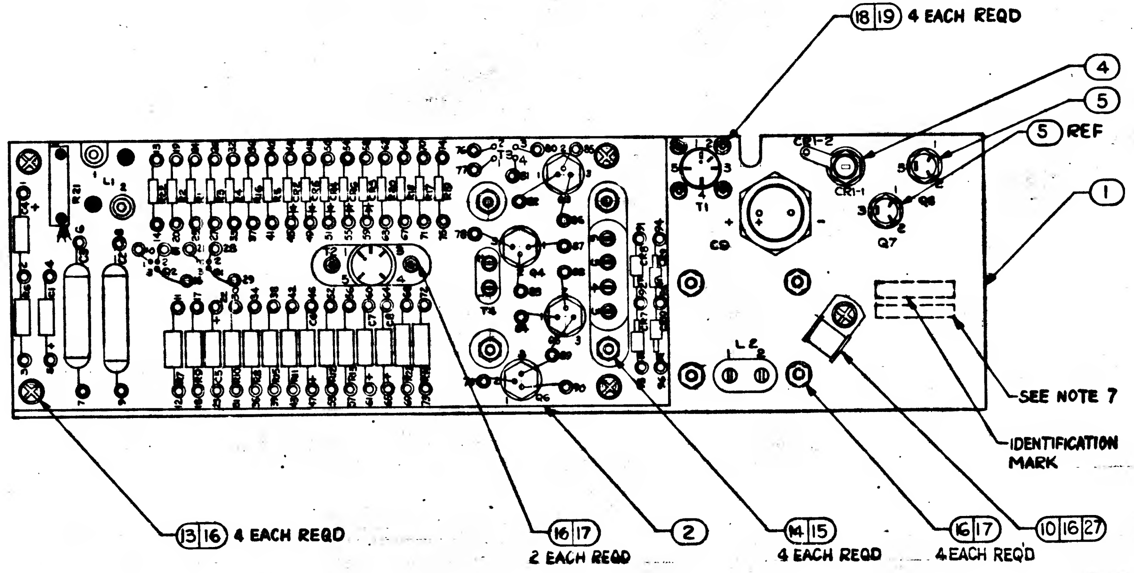
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
|---|---|---|---|---|---|
| D | | REPLACES REVISION "C" WITH CHANGE PER MXC 188343 | | 29 JUL 63 | C A W |
| | | PER TDRR 02576 | | | |
| E | | CHANGE IN ACCORDANCE WITH MXC 189187 | | 29 AUG 63 | J. J. J. |
| | | REVISED CUSTOMER DATA (V7-63) | | 29 AUG 63 | J. J. J. |
| F | | CHANGE IN ACCORDANCE WITH MXC 189925 | | 18 SEP 63 | RS |
| G | | CHANGE IN ACCORDANCE WITH MXC 190921 | | 1 OCT 63 | |
| H | | CHANGE IN ACCORDANCE WITH MXC 191008 | | 1 OCT 63 | |
| J | — | CHANGE IN ACCORDANCE WITH MXC 191729 PER TDRR 04970 | — | NOV 63 | EL |



**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01211 DATE 6 May 63

(D) REPLACES REV C WITH CHANGE



| | | | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | 1 | | 27 | MS35216-26 | SCREW-PAN HEAD |
| | | | | | AR | | 26 | MIL-F-14256<br>QQ-S-571 | FLUX (ES-2798)<br>FLUX TYPE AR (ES-2175 TYPE 1 OR 2) |
| | | | | | AR | | 25 | QQ-S-571 | SOLDER SN60 (ES-2175 ALLOY 1) |
| | | | | | AR | | 24 | MIL-S-40083 CL-20 | SEALING COMPOUND (ES-2544-3) |
| | | | | | | | 23 | | |
| | | | | | X | | 22 | 1900341 | SCHEMATIC DIAGRAM ELEC. |
| | | | | | | | 21 | | |
| | | | | | 1 | | 20 | 1900418 | WIRING HARNESS "A" |
| | | | | | 4 | | 19 | AN960C4 | (1897006-024) WASHER-FLAT |
| NOTE 6 | | | | | 4 | | 18 | 1016151-004 | NUT-SELF LOCKING |
| | | | | | 6 | | 17 | AN363C632 | (1896990-261) NUT-SELF LOCKING |
| | | | | | 11 | | 16 | AN960C6 | (1897006-026) WASHER-FLAT |
| | | | | | 4 | | 15 | AN363C832 | (1896990-281) NUT-SELF LOCKING |
| | | | | | 4 | | 14 | AN960C8 | (1897006-028) WASHER-FLAT |
| | | | | | 4 | | 13 | MS35216-29 | SCREW-PAN HEAD |
| NOTE 6 | | | | | 4 | | 12 | 1015860-001 | SPACER |
| | | | | | | | 11 | | |
| | | | | | 1 | | 10 | MS21919DG-3 | (1897073-103) CLAMP-CABLE |
| NOTE 6 | | | | | 1 | | 9 | 1015900 | TRANSFORMER-POWER |
| NOTE 6 | | | | | 1 | | 8 | 1016176 | TRANSFORMER 4.5:1 STEP-DOWN |
| NOTE 6 | | | | | 1 | | 7 | 1015960 | TRANSFORMER 1:8 STEP-UP |
| NOTE 6 | | | | | 1 | | 6 | 1015899 | REACTOR-FILTER |
| NOTE 6 | | | | | 1 | | 5 | 1015930-2 | TRANSISTOR, MATCHED PAIR |
| NOTE 6 | | | | | 1 | | 4 | 1015939-011 | DIODE-ZENER |
| | | | | | 1 | | 3 | CE41C451G | (1897095-022) CAPACITOR |
| | | | | | 1 | | 2 | 1900402-011 | TERMINAL BOARD ASSEMBLY |
| | | | | | 1 | | 1 | 1900401 | BRACKET INSEPARABLE ASSY |

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900702-011 | 1900702-011 | -011 |
| 1900060-011 | 1900060-011 | -011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 28 JUN 63 DATE
CHECKED 28 Jun 63
APPROVAL H. W. Williams 17 Jul 63
APPROVAL 8/14/63
NASA APPROVAL 7-4-63
MIT APPROVAL 14 Aug 63

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

POWER SUPPLY
2 VOLTS 3200 CPS
ASSEMBLY

CODE IDENT NO. | SIZE E | 1900081
SCALE 1:1 | SHEET 1 OF 1

INCHES
PHOTOGRAPHIC SCALE ONLY

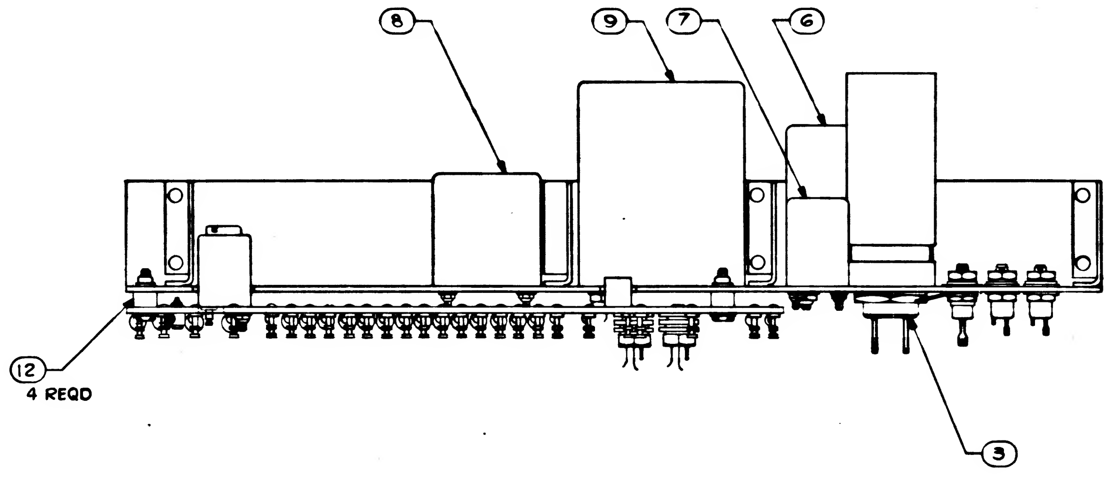
1900081

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PERSCRIBED BY MIL-D-70327.
2. MUST BE FREE FROM BURRS AND SHARP EDGES.
3. SOLDER PER MIL-S-440 USING ITEM ㉕ & ITEM ㉖
4.
5. IDENTIFY USING DRAWING NO. PREFIXED BY "ASSY" WITH APPLICABLE DASH NO. & REVISION LETTER PER MIL-STD-130 (ES-267).
6. VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.
7. MARK "SCHEM" & APPLICABLE SCHEMATIC DRAWING NUMBER PER ND1002019, .09 HIGH, COLOR BLACK.
8. SERIALIZE PER ND1002023

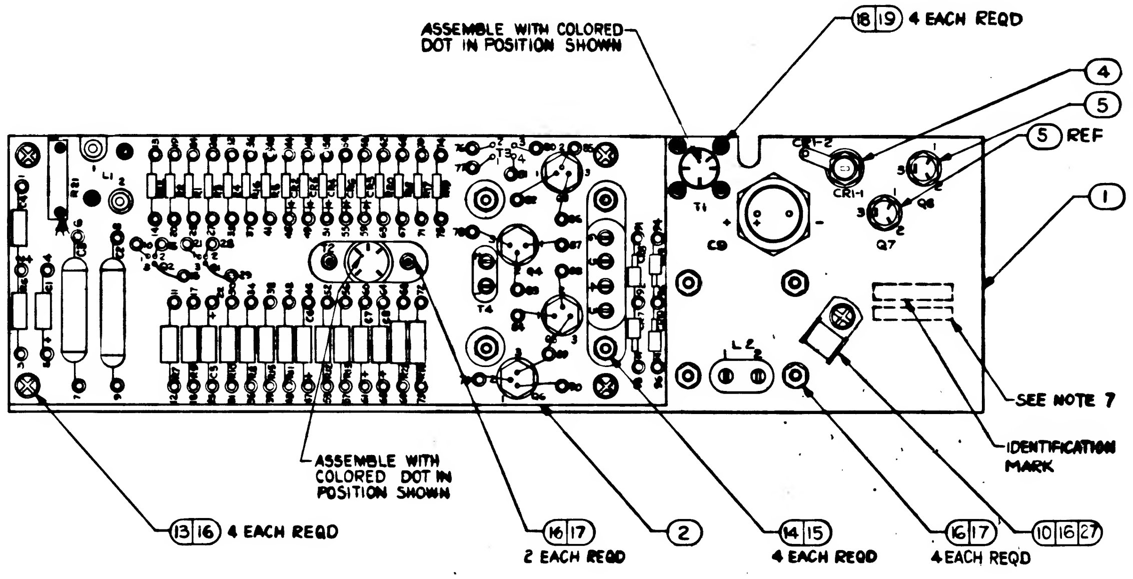
REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
|---|---|---|---|---|---|
| D | | REPLACES REVISION C WITH CHANGE PER MXC 188963<br>PER TDRR 02576 | | 29 JUL 63 | CAM |
| E | | CHANGE IN ACCORDANCE WITH MXC 189187 | | 29 AUG 63 | J.J.J. AU |
| | | REVISED CUSTOMER DATA (V7-63) | | 29 AUG 63 | J.J.J. AU |
| F | | CHANGE IN ACCORDANCE WITH MXC 189925 | | 18 SEP 63 | RS |
| G | | CHANGE IN ACCORDANCE WITH MXC 190321 | | 17 OCT 63 | J.J.J. |
| H | | CHANGE IN ACCORDANCE WITH MXC 19008 | | 17 OCT 63 | J.J.J. |
| J | — | CHANGE IN ACCORDANCE WITH MXC 191729<br>PER TDRR 04974 | — | 11 NOV 63 | LEL |
| K | – | CHANGE IN ACCORDANCE WITH MXC 92117 PER TDRR 09289 | | 9 JAN 64 | J.J.J. |
| L | – | CHANGE IN ACCORDANCE WITH CM 192823 | | 21 JAN 64 | RAW |
| M | | CHANGE IN ACCORDANCE WITH CM-194867 | | 11 FEB 64 | |
| N | | CHANGE IN ACCORDANCE WITH CM 96958<br>REVISED PER TDRR 09290 | — | 21 APR 64 | JB |

Y2-64



FOR INFORMATION ONLY
CLASS B RELEASE TDR No. 
DATE 1 May 63



Ⓓ REPLACES REV C WITH CHANGE

| | | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|---|
| | | | | 1 | | 28 | 1901636 | WIRE LIST B-B |
| | | | | | | | | |
| | | | | | | | | |
| | | | | 1 | | 27 | MS35216-26 | SCREW-PAN HEAD |
| | | | | AR | | 26 | MIL-F-14256 | FLUX (ES-2798) |
| | | | | | | | QQ-S-571 | FLUX TYPE AR (ES-2175 TYPE 1 OR 2) |
| | | | | AR | | 25 | QQ-S-571 | SOLDER SN60 (ES-2175 ALLOY 1) |
| | | | | | | 24 | | |
| | | | | | | 23 | | |
| | | | | X | | 22 | 1900341 | SCHEMATIC DIAGRAM ELEC. |
| | | | | | | 21 | | |
| | | | | 1 | | 20 | 1900418 | WIRING HARNESS "A" |
| | | | | 4 | | 19 | AN960C4 | (1897006-024) WASHER-FLAT |
| NOTE 6 | | | | 4 | | 18 | 1016151-004 | NUT-SELF LOCKING |
| | | | | 6 | | 17 | AN363C632 | (1896990-261) NUT-SELF LOCKING |
| | | | | 11 | | 16 | AN960C6 | (1897006-026) WASHER-FLAT |
| | | | | 4 | | 15 | AN340C8 | (1896988-081) NUT, PLAIN |
| | | | | 4 | | 14 | MS35333-72 | WASHER, LOCK, FLAT, INTERNAL TOOTH |
| | | | | 4 | | 13 | MS35216-29 | SCREW-PAN HEAD |
| NOTE 6 | | | | 4 | | 12 | 1015860-001 | SPACER |
| | | | | | | 11 | | |
| | | | | 1 | | 10 | MS21919DG-4 | (1897073-104) CLAMP-CABLE |
| NOTE 6 | | | | 1 | | 9 | 1015900 | TRANSFORMER-POWER |
| NOTE 6 | | | | 1 | | 8 | 1016176 | TRANSFORMER 4.5:1 STEP-DOWN |
| NOTE 6 | | | | 1 | | 7 | 1015960 | TRANSFORMER 1:8 STEP-UP |
| NOTE 6 | | | | 1 | | 6 | 1015899 | REACTOR-FILTER |
| NOTE 6 | | | | 1 | | 5 | 1015930-2 | TRANSISTOR, MATCHED PAIR |
| NOTE 6 | | | | 1 | | 4 | 1015939-011 | DIODE-ZENER |
| | | | | 1 | | 3 | CE41C4516 | (1897095-022) CAPACITOR |
| | | | | 1 | | 2 | 1900402-011 | TERMINAL BOARD ASSEMBLY |
| | | | | 1 | | 1 | 1900401 | BRACKET INSEPARABLE ASSY |

QUANTITY REQUIRED
LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| 1900702-011 | 1900702-011 | -011 |
| 1900060-011 | 1900060-011 | -011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 28 JUN 63 DATE
CHECKED R. Wagner 28 Jun 63
APPROVAL N.W. Williams 17 Jul 63
APPROVAL Gehman
NASA APPROVAL W. J. Rhine 7-4-63
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

POWER SUPPLY
2 VOLTS 3200 CPS
ASSEMBLY

CODE IDENT NO.
SIZE E
1900081
SCALE 1:1
SHEET 1 OF 1

1900081

1800061

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD |
|---|---|---|---|---|---|
| | | | | | |

PICTURE INCOMPLETE

**FOR INFORMATION ONLY**

**CLASS B RELEASE TDR No.** 01211 **DATE** 8 May 63

| | | | 011 | EFFEC-TIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | 1 | | | CL53CJ401UP3 | CAPACITOR (MIL-C-3965) |
| | | | 5 | | | CS15BE010K | CAPACITOR (MIL-C-26655) |
| | | | 1 | | | CP09A1KC333K3 | CAPACITOR (MIL-C-250) |
| | | | 1 | | | CP09A1KB274K3 | CAPACITOR (MIL-C-250) |
| | | | 1 | | | CS15BF2R2K | CAPACITOR (MIL-C-26655) |
| | | | 1 | | | RN65C6191F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RN65C4322F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RN65C3322F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RN65C8251F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RC42GF680J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RC20GF122J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RT12C2L103 | RESISTOR (MIL-R-27208 |
| | | | 2 | | | RC20GF101J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RC20GF200J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RC32GF182J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RN65C2001F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RN65C1002F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RN65C3922F | RESISTOR (MIL-R-105C4) |
| | | | 1 | | | RN65C7502F | RESISTOR (MIL-R-10509) |
| | | | 1 | | | RC20GF472J | RESISTOR (MIL-R-11) |
| | | | 3 | | | RC20GF103J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RC20GF333J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RC20GF302J | RESISTOR (MIL-R-11) |
| | | | 1 | | | RC20GF202J | RESISTOR (MIL-R-11) |
| QUANTITY REQUIRED | | | | | | LIST OF PARTS AND MATERIALS | |

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900060-011 | 1900004 | 011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± — ± — ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN A. J. Fluder DATE 24 APR 63
CHECKED 24 APR 63
APPROVAL H. Hugh Williams 24 APR 63
APPROVAL 24 APR 63
NASA APPROVAL 5/8/63
L Gedman May 8, 1963
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

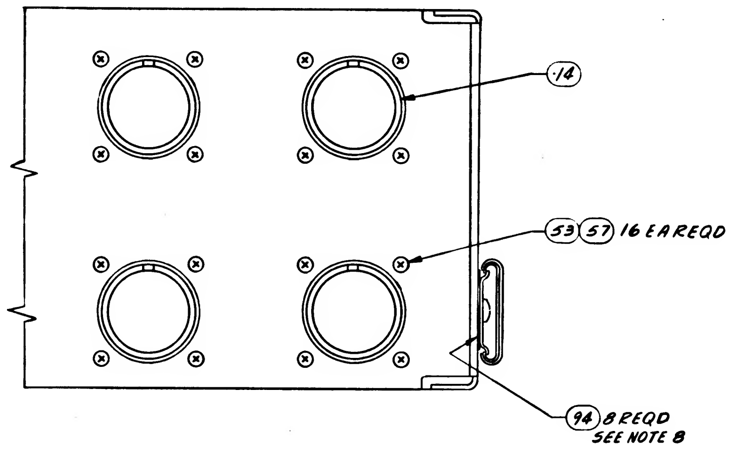
POWER SUPPLY
2 VOLT, 3200 CYCLES, 3 AMPERE
ASSEMBLY

CODE IDENT NO.
SIZE D
1900081
SCALE —
SHEET

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. SOLDER PER MIL-STD 440 USING ITEMS 68 AND 69.
3. PANEL AND CHASSIS TO BE CENTRALIZED WITHIN .010.
4. DRAWER SLIDE MOUNTING SCREWS AND FRONT PANEL MOUNTING SCREWS SHALL BE SUBJECTED TO TORQUE OF 37-40 IN/LBS AT INSTALLATION.
5. MARK WEIGHT OF ASSEMBLY (39 LBS) PER ND-1002123 ADJACENT TO NAMEPLATE LOCATION.
6. SHIM TO FIT. PEEL OFF EXCESS SHIM STOCK
7. SELECT AS REQUIRED
8. VENDOR ITEM, SEE SPECIFICATION CONTROL DRAWING
9. MARK "SCHEM" AND APPLICABLE SCHEMATIC DRAWING NUMBER PER ND 1002019, .12 HIGH, COLOR BLACK.
10. MARK APPLICABLE CONTRACT NO. AND SERIAL NO. TO ITEM 76 IN ACCORDANCE WITH ND 1002023. LETTERS AND NUMERALS TO BE .06 HIGH.
11. REMOVE EXISTING FLAT HEAD SCREW AND REPLACE WITH ITEM 56
12. SECURE ITEM 59 USING ITEM 81
13. MARK "DWG REV LTR ___" AND APPLICABLE DRAWING REVISION LETTER PER ND 1002019, .12 HIGH, COLOR BLACK, IN LOCATION SHOWN.



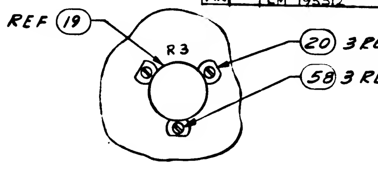
PARTIAL VIEW B-B
ZONE G6 SH 2

REVISIONS

| SYM | ZONE | DESCRIPTION | DATE | APPD |
|---|---|---|---|---|
| AE | | CHANGE IN ACCORDANCE WITH CM 193218 TDRR 08829 | 5-26-64 | WR |
| AF | | CHANGE IN ACCORDANCE WITH CM 193915-TDRR 08830 | 5-26-64 | WR |
| AG | | CHANGE IN ACCORDANCE WITH CM 194037 | 3 FEB 64 | JJJ RJJ |
| | | REVISED PER TDR 08831 | 5-26-64 | WR |
| AH | | CHANGE IN ACCORDANCE WITH CM 194683 TDRR 08832 | 5-26-64 | WK |
| AJ | — | CHANGE IN ACCORDANCE WITH CM 195169 | 17 MAR 64 | JM. EF |
| AK | | REPLACED WITH CHANGE BY REV. AL CM 195512 TDRR 08E33 | 30 MAR 64 | RJJ WR |

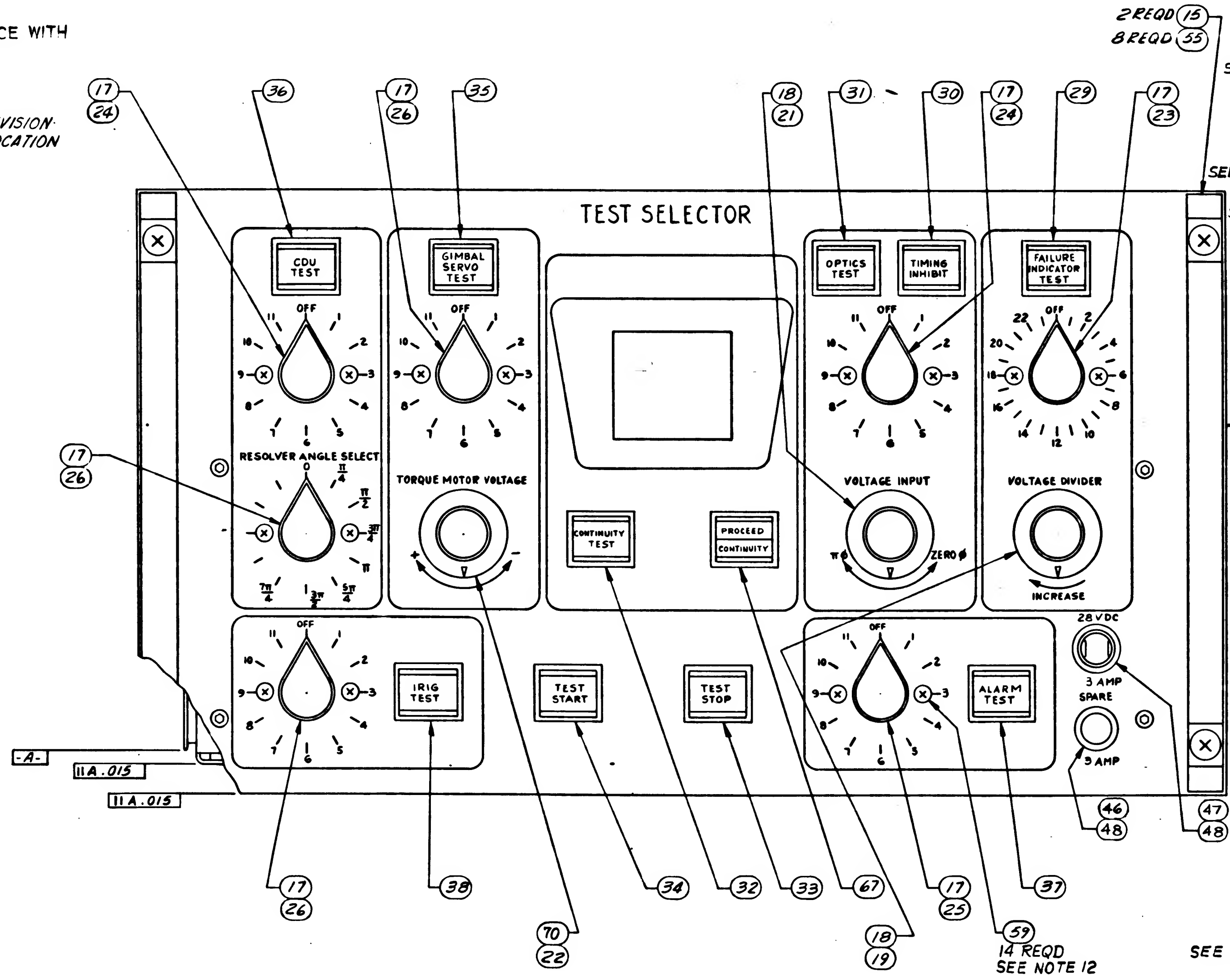
REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
|---|---|---|---|---|---|
| W | | REPLACES REV V WITH CHANGE PER MXC 190585 REVISED PER TDR | | 13 JAN | L.G.H. RJJ |
| Y | | CHANGE IN ACCORDANCE WITH MXC 190927 | — | 30 JAN 64 | JJJ RJJ |
| - | | ADDED CUSTOMER DATA (V7-63) | — | 30 JAN 64 | JJJ RJJ |
| Z | | CHANGE IN ACCORDANCE WITH MXC 191467 | — | 30 JAN 64 | JJJ RJJ |
| AA | | CHANGE IN ACCORDANCE WITH MXC 191767 | — | 30 JAN 64 | JJJ RJJ |
| AB | | CHANGE IN ACCORDANCE WITH MXC 192153 | — | 30 JAN 64 | JJJ RJJ |
| AC | | REVISION STATUS CHANGED PER CM 192856 | — | 30 JAN 64 | JJJ RJJ |
| AD | | CHANGE IN ACCORDANCE WITH CM 193007 | — | 30 JAN 64 | JJJ RJJ |



PARTIAL VIEW C-C
ZONE C3 SH 2

**FOR INFORMATION ONLY**
**CLASS B RELEASE TDR No.** 01314 **DATE** 22 May 63



VIEW A-A
ZONE B2 SH2

| | | | | | | |
|---|---|---|---|---|---|---|
| AK | AJ | AH | AG | AF | AE | AD |
| AK | AJ | AH | AE | AE | AE | AD |

| SHEET 1 | SHEET 2 |
|---|---|
| AK | AK |
| AJ | AJ |
| AH | AH |
| AG | AE |
| AF | AE |
| AE | AE |
| AD | AD |
| AC | AC |
| AB | Z |
| AA | Z |
| Z | Z |
| Y | W |
| W | W |

REVISION STATUS OF SHEETS

Ⓦ **REPLACES REV-V WITH CHANGE**
(AK) **REPLACED WITH CHANGE BY REV AL**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | 8 | | 94 | 1016005-1 | SHIM, SLIDE LOCATING |
| SEE NOTE 7 | | | | 1 | | 93 | ↑ 13 THRU 15 | ↑ -113 THRU 115 |
| SEE NOTE 7 | | | | 2 | | 92 | 11 THRU 13 | -111 THRU 113 |
| SEE NOTE 7 | | | | 1 | | 91 | 10 THRU 12 | -110 THRU 112 |
| SEE NOTE 7 | | | | 1 | | 90 | 9 THRU 11 | -109 THRU 111 |
| SEE NOTE 7 | | | | 1 | | 89 | 8 THRU 10 | -108 THRU 110 |
| SEE NOTE 7 | | | | 4 | | 88 | 7 THRU 9 | -107 THRU 109 |
| SEE NOTE 7 | | | | 3 | | 87 | 6 THRU 8 | -106 THRU 108 |
| SEE NOTE 7 | | | | 1 | | 86 | 5 THRU 7 | -105 THRU 107 |
| | | | | 2 | | 85 | MS21919 D6 3 THRU 5 | (1897073-103 THRU 105 CLAMP, CABLE |
| | | | | 8 | | 84 | MS35333-71 | WASHER, LOCK, INTERNAL TOOTH |
| | | | | 16 | | 83 | AN960-C6 | (1897006-026) WASHER, FLAT |
| | | | | 4 | | 82 | 1015981-005 | STANDOFF, HEX, THREADED |
| | | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| | QUANTITY REQUIRED | | | | | | LIST OF PARTS AND MATERIALS | |

BIL 1077E-P

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | AR | | 81 | MIL-S-40083 (ORD) CL20 | SEALING & RETAINING COMPOUND (ES-2544-3 |
| | | | | 1 | | 80 | MS35333-71 | WASHER-LOCK |
| | | | | 1 | | 79 | AN960-C8 | (1897006-026) WASHER, FLAT |
| | | | | ☒ | | 78 | 1900692 | TEST SELECTOR ELEC. SCHEM. |
| | | | | 4 | | 77 | AN535-00-4 | (1897109-004) SCREW, DRIVE, ROUND HD |
| | | | | 1 | | 76 | 1901304-109 | NAMEPLATE, APOLLO, G&N |
| | | | | 1 | | 75 | 1900690 | WIRING HARNESS "B" |
| | | | | 1 | | 74 | 1900691 | WIRE LIST B-B |
| | | | | 1 | | 73 | 1900689 | WIRE LIST A-A |
| | | | | — | | 72 | PS 1900082 | PROCUREMENT SPECIFICATION |
| SEE NOTE 8 | | | | 2 | | 71 | 1015832-318 | RELAY, SENSITIVE |
| | | | | 1 | | 70 | MS91528-2F2B | KNOB, CONTROL |
| | | | | AR | | 69 | MIL-F-14256<br>QQ-S-571 | FLUX (ES-2798)<br>FLUX TYPE AR (ES-2175 TYPE 1 OR 2) |
| | | | | AR | | 68 | QQ-S-571 | SOLDER SN60 (ES-2175 ALLOY 1) |
| SEE NOTE 8 | | | | 1 | | 67 | 1015869-337 | LIGHT-INDICATOR |
| | | | | 2 | | 66 | 1015912-193 | SCREW |
| | | | | 1 | | 65 | 1900220 | SPACER, DIGITAL READOUT |
| | | | | 2 | | 64 | MS35338-3 | WASHER |
| | | | | 12 | | 63 | MS-35216-27 | SCREW |
| | | | | 4 | | 62 | AN363C1032 | NUT (1896990-011) |
| SEE NOTE 8 | | | | 4 | | 61 | 1006783-45 | SCREW |
| SEE NOTE 8 | | | | 8 | | 60 | 1006783-44 | SCREW |
| | | | | 14 | | 59 | MS-35200-40 | SCREW |
| SEE NOTE 8 | | | | 3 | | 58 | 1000093-14 | SCREW |
| | | | | 20 | | 57 | AN363C632 | NUT (1896990-261) |
| | | | | 11 | | 56 | MS-35216-25 | SCREW |
| SEE NOTE 8 | | | | 8 | | 55 | 1015831-257 | SCREW |
| | | | | 4 | | 54 | MS-35216-39 | SCREW |
| | | | | 28 | | 53 | MS-35216-26 | SCREW |
| | | | | 24 | | 52 | 1016151-004 | NUT |
| | | | | 6 | | 51 | MS-35216-13 | SCREW |
| | | | | 55 | | 50 | MS-35216-24 | SCREW |
| | | | | | | 49 | | |
| | | | | 2 | | 48 | MS-90078-12-1 | FUSE |
| SEE NOTE 8 | | | | 1 | | 47 | 1015873-008 | FUSEHOLDER |
| | | | | 1 | | 46 | MS-26572-1 | FUSEHOLDER |
| SEE NOTE 8 | | | | 1 | | 45 | 1015844-001 | DIGITAL READOUT |
| SEE NOTE 8 | | | | 1 | | 44 | 1015943-001 | BEZEL |
| | | | | | | 43 | | |
| SEE NOTE 8 | | | | 1 | | 42 | 1015833-008 | RELAY |
| SEE NOTE 8 | | | | 1 | | 41 | 1015833-007 | RELAY |
| | | | | 1 | | 40 | 1016082 | TRANSFORMER |
| | | | | 1 | | 39 | 1016034 | TRANSFORMER |
| SEE NOTE 8 | | | | 1 | | 38 | 1015869-329 | LIGHT-INDICATOR |
| SEE NOTE 8 | | | | 1 | | 37 | 1015869-703 | LIGHT-INDICATOR |
| SEE NOTE 8 | | | | 1 | | 36 | 1015869-323 | LIGHT-INDICATOR |
| SEE NOTE 8 | | | | 1 | | 35 | 1015869-702 | LIGHT-INDICATOR |
| SEE NOTE 8 | | | | 1 | | 34 | 1015869-325 | LIGHT-INDICATOR |
| SEE NOTE 8 | | | | 1 | | 33 | 1015869-326 | LIGHT-INDICATOR |
| SEE NOTE 8 | | | | 1 | | 32 | 1015869-517 | LIGHT-INDICATOR |
| SEE NOTE 8 | | | | 1 | | 31 | 1015869-539 | LIGHT-INDICATOR |
| SEE NOTE 8 | | | | 1 | | 30 | 1015869-518 | LIGHT-INDICATOR |
| SEE NOTE 8 | | | | 1 | | 29 | 1015869-328 | LIGHT-INDICATOR |
| | | | | | | 28 | | |
| | | | | | | 27 | | |
| SEE NOTE 8 | | | | 3 | | 26 | 1015825-018 | SWITCH, ROTARY |
| SEE NOTE 8 | | | | 1 | | 25 | 1015825-017 | SWITCH, ROTARY |
| SEE NOTE 8 | | | | 2 | | 24 | 1015825-019 | SWITCH, ROTARY |
| SEE NOTE 8 | | | | 1 | | 23 | 1015825-020 | SWITCH, ROTARY |
| SEE NOTE 8 | | | | 1 | | 22 | 1016003-10 | RESISTOR, VARIABLE |
| SEE NOTE 8 | | | | 1 | | 21 | 1015951-504 | RESISTOR |
| SEE NOTE 8 | | | | 3 | | 20 | 1016004-008 | CLAMP |
| SEE NOTE 8 | | | | 1 | | 19 | 1015959 | RESISTOR-VARIABLE |
| | | | | 2 | | 18 | MS-91528-2F1B | KNOB, CONTROL |
| | | | | 7 | | 17 | MS-91528-2K2B | KNOB, CONTROL |
| | | | | | | 16 | | |
| | | | | 2 | | 15 | 1900015-061 | HANDLE ASSY |
| | | | | 1 | | 14 | 1900187 | WIRING HARNESS "A" |
| SEE NOTE 8 | | | | 10 | | 13 | 1015802-004 | RELAY-ARMATURE |
| SEE NOTE 8 | | | | 1 | | 12 | 1015833-009 | RELAY |
| SEE NOTE 8 | | | | 26 | | 11 | 1015837-001 | RELAY, ARMATURE |
| | | | | | | 10 | | |
| SEE NOTE 8 | | | | 1 | | 9 | 1015785-010 | SLIDE ASSY-L.H. |
| SEE NOTE 8 | | | | 1 | | 8 | 1015785-009 | SLIDE ASSY-R.H. |
| SEE NOTE 8 | | | | 12 | | 7 | 1015860-025 | SPACER |
| | | | | 1 | | 6 | 1900254-011 | COMPONENT BOARD ASSY |
| | | | | 1 | | 5 | 1900231-011 | DIODE BOARD ASSY |
| | | | | 1 | | 4 | 1900230 | BRACKET, MOUNTING (INSEP) ASSY |
| | | | | 1 | | 3 | 1900253 | PLATE, CHASSIS |
| | | | | 1 | | 2 | 1900252 | DRAWER |
| | | | | 1 | | 1 | 1900251 | PANEL, FRONT. |
| | | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| | QUANTITY REQUIRED | | | | | | LIST OF PARTS AND MATERIALS | |

AK
1900082

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900004 | 1900004 | -011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

| FRACTIONS | DECIMALS | ANGLES |
|---|---|---|
| +— | +— | +— |
| —— | —— | —— |

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN Teschke DATE 25 JUN 63
CHECKED C Pioda 3 JUL 63
APPROVAL L Pierce 7-3-63
APPROVAL 26 May 63
NASA APPROVAL W J Rhine 5-26-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TEST SELECTOR
ASSEMBLY

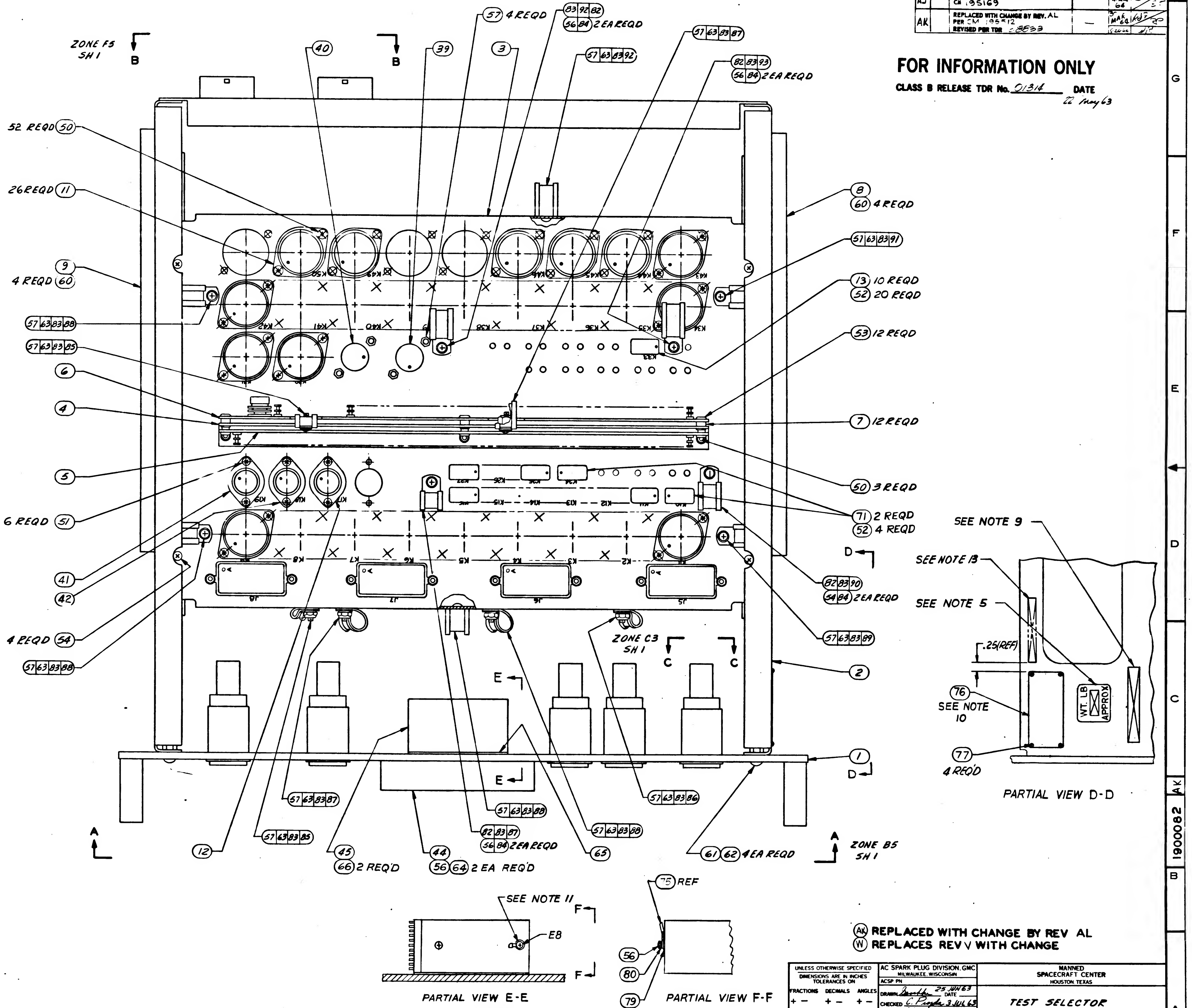
CODE IDENT NO.
SIZE E
1900082

SCALE FULL
SHEET 1 OF 2

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| W | | REPLACES REV V WITH CHANGE PER MXC 190585 REVISED PER TDR | | 13 JAN 64 | RJJ |
| Z | | CHANGE IN ACCORDANCE WITH MXC 191467 | — | 30 JAN 64 | J.J.J RJJ |
| AC | | CHANGE IN ACCORDANCE WITH CM 92856 | — | 30 JAN 64 | JJJ RJJ |
| AD | | CHANGE IN ACCORDANCE WITH CM 193007 | — | 30 JAN 64 | JJJ RJJ |
| AE | | CHANGE IN ACCORDANCE WITH CM 193218 TDR 08829 | — | 5-26-64 | WJC |
| AH | | CHANGE IN ACCORDANCE WITH CM194683 TDRR 08832 | — | 5-26-64 | WJC |
| AJ | | CHANGE IN ACCORDANCE WITH CM 195169 | — | 17 MAR 64 | JM. |
| AK | | REPLACED WITH CHANGE BY REV. AL PER CM 195512 REVISED PER TDR 08833 | — | 31 MAR 64<br>5-26-64 | KdJ<br>WJC |

**FOR INFORMATION ONLY**

**CLASS B RELEASE TDR No.** 01314 **DATE** 22 May 63



Ⓐⓚ REPLACED WITH CHANGE BY REV AL
Ⓦ REPLACES REV V WITH CHANGE

| | | |
|---|---|---|
| UNLESS OTHERWISE SPECIFIED<br>DIMENSIONS ARE IN INCHES<br>TOLERANCES ON<br>FRACTIONS + — — —<br>DECIMALS + — — —<br>ANGLES + — — — | AC SPARK PLUG DIVISION, GMC<br>MILWAUKEE, WISCONSIN | MANNED<br>SPACECRAFT CENTER<br>HOUSTON, TEXAS |
| | ACSP PN | |
| DO NOT SCALE THIS DRAWING | DRAWN DATE 25 JUN 63<br>CHECKED C. Pryde 3 JUL 63<br>APPROVAL 7-3-63<br>APPROVAL 26 May 64 | TEST SELECTOR ASSEMBLY |
| MATERIAL | NASA APPROVAL W J 5-26-64 | CODE IDENT NO / SIZE E / 1900082 |
| CONTRACT NAS 9-497 | MIT APPROVAL 26 May 64 | SCALE FULL / SHEET 2 OF 2 |

1900082 AK

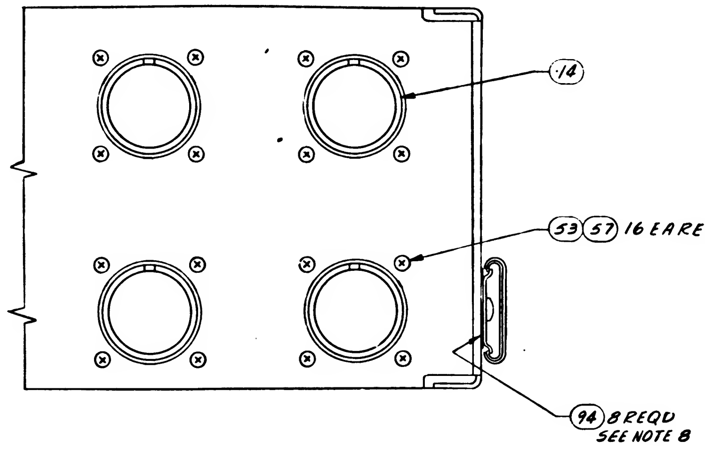
S800061

NOTES:

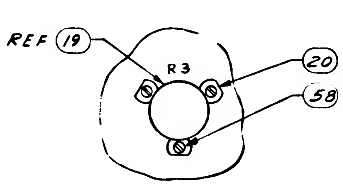
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. SOLDER PER MIL-STD 440 USING ITEMS 68 AND 69.
3. DIMENSION "A" MUST BE EQUAL TO DIMENSION "B" WITHIN .040
4. DRAWER SLIDE MOUNTING SCREWS AND FRONT PANEL MOUNTING SCREWS SHALL BE SUBJECTED TO TORQUE OF 37-40 IN/LBS AT INSTALLATION.
5. MARK WEIGHT OF ASSEMBLY (39 LBS) PER ND-1002123 ADJACENT TO NAMEPLATE LOCATION.
6. SHIM TO FIT. PEEL OFF EXCESS SHIM STOCK
7. SELECT AS REQUIRED
8. VENDOR ITEM, SEE SPECIFICATION CONTROL DRAWING
9. MARK "SCHEM" AND APPLICABLE SCHEMATIC DRAWING NUMBER PER ND 1002019, .12 HIGH, COLOR BLACK.
10. MARK APPLICABLE CONTRACT NO. AND SERIAL NO. TO ITEM 76 IN ACCORDANCE WITH ND 1002023. LETTERS AND NUMERALS TO BE .06 HIGH.
11. REMOVE EXISTING FLAT HEAD SCREW AND REPLACE WITH ITEM 56
12. SECURE ITEM 59 USING ITEM 81
13. MARK "DWG REV LTR ___" AND APPLICABLE DRAWING REVISION LETTER PER ND 1002019, .12 HIGH, COLOR BLACK, IN LOCATION SHOWN.

## REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD |
|---|---|---|---|---|---|
| AL | | REPLACES REV. AK WITH CHANGE PER CM 195512<br>REVISED PER TDR [illegible] | — | 30 MAR 64 | [illegible] |
| AM | — | CHANGE IN ACCORDANCE WITH CM-195857 | — | 9 APR. 64 | J B. |
| AN | - | CHANGE IN ACCORDANCE WITH CM 196492 TDR [illegible] | — | 27 APR 64 | [illegible] |



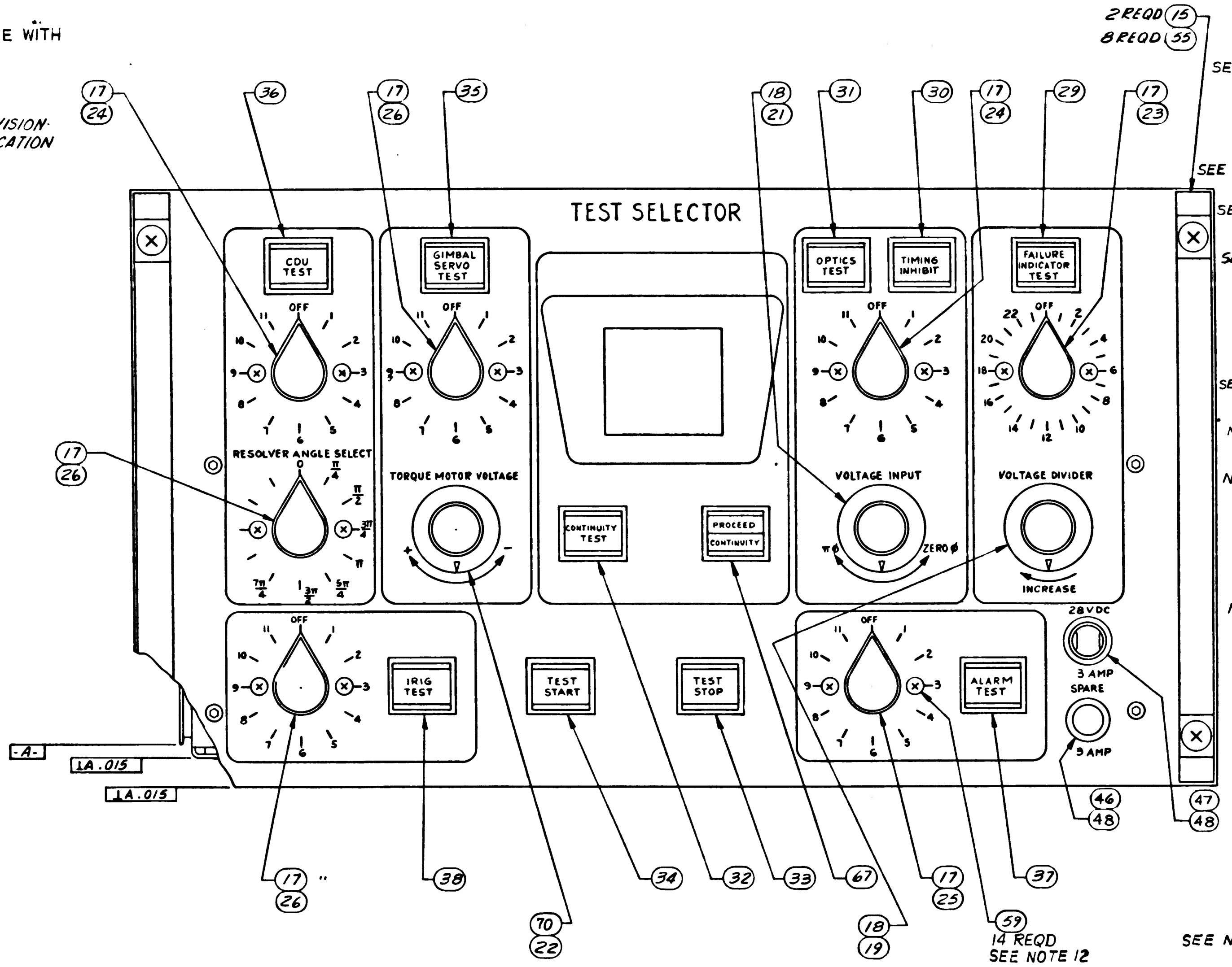
PARTIAL VIEW B-B
ZONE G6 SH 2



PARTIAL VIEW C-C
ZONE C3 SH 2

**FOR INFORMATION ONLY**

**CLASS B RELEASE TDR No.________ DATE**



VIEW A-A
ZONE B2 SH2

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | AR | | 81 | MIL-S-40083(ORD)CL20 | SEALING & RETAINING COMPOUND (ES-2544-3) |
| | | | | 1 | | 80 | MS35333-71 | WASHER-LOCK |
| | | | | 1 | | 79 | AN960-C8 | (1897006-026) WASHER, FLAT |
| | | | | ╳ | | 78 | 1900692 | TEST SELECTOR ELEC. SCHEM. |
| | | | | 4 | | 77 | AN535-00-4 | (1897109-004) SCREW, DRIVE, ROUND HD |
| | | | | 1 | | 76 | 1901304-109 | NAMEPLATE, APOLLO, G&N |
| | | | | 1 | | 75 | 1900690 | WIRING HARNESS "B" |
| | | | | 1 | | 74 | 1900691 | WIRE LIST B-B |
| | | | | 1 | | 73 | 1900689 | WIRE LIST A-A |
| | | | | — | | 72 | PS 1900082 | PROCUREMENT SPECIFICATION |
| SEE NOTE 8 | | | | 2 | | 71 | 1015832-318 | RELAY, SENSITIVE |
| | | | | 1 | | 70 | MS91528-2F2B | KNOB, CONTROL |
| | | | | | | | MIL-F-14256 | FLUX (ES-2798) |
| | | | | AR | | 69 | QQ-S-571 | FLUX TYPE AR (ES-2175 TYPE 1 OR 2) |
| | | | | AR | | 68 | QQ-S-571 | SOLDER SN60 (ES-2175 ALLOY 1) |
| SEE NOTE 8 | | | | 1 | | 67 | 1015869-337 | LIGHT-INDICATOR |
| | | | | 2 | | 66 | 1015912-193 | SCREW |
| | | | | 1 | | 65 | 1900220 | SPACER, DIGITAL READOUT |
| | | | | 2 | | 64 | MS35338-3 | WASHER |
| | | | | 12 | | 63 | MS-35216-27 | SCREW |
| | | | | 4 | | 62 | AN363C1032 | NUT (1896990-011) |
| SEE NOTE 8 | | | | 4 | | 61 | 1006783-45 | SCREW |
| | | | | 8 | | 60 | 1006783-44 | SCREW |
| | | | | 14 | | 59 | MS-35200-40 | SCREW |
| SEE NOTE 8 | | | | 3 | | 58 | 1000093-14 | SCREW |
| | | | | 20 | | 57 | AN363C632 | NUT (1896990-261) |
| | | | | 11 | | 56 | MS-35216-25 | SCREW |
| SEE NOTE 8 | | | | 8 | | 55 | 1015831-257 | SCREW |
| | | | | 4 | | 54 | MS-35216-39 | SCREW |
| | | | | 28 | | 53 | MS-35216-26 | SCREW |
| | | | | 26 | | 52 | 1016151-004 | NUT |
| | | | | 6 | | 51 | MS-35216-13 | SCREW |
| | | | | 55 | | 50 | MS-35216-24 | SCREW |
| | | | | | | 49 | | |
| | | | | 2 | | 48 | MS-90078-12-1 | FUSE |
| SEE NOTE 8 | | | | 1 | | 47 | 1015873-008 | FUSEHOLDER |
| | | | | 1 | | 46 | MS-26572-1 | FUSEHOLDER |
| SEE NOTE 8 | | | | 1 | | 45 | 1015844-001 | DIGITAL READOUT |
| | | | | 1 | | 44 | 1015943-001 | BEZEL |
| | | | | | | 43 | | |
| SEE NOTE 8 | | | | 1 | | 42 | 1015833-008 | RELAY |
| | | | | 1 | | 41 | 1015833-007 | RELAY |
| | | | | 1 | | 40 | 1016082 | TRANSFORMER |
| | | | | 1 | | 39 | 1016034 | TRANSFORMER |
| SEE NOTE 8 | | | | 1 | | 38 | 1015869-329 | LIGHT-INDICATOR |
| | | | | 1 | | 37 | 1015869-703 | LIGHT-INDICATOR |
| | | | | 1 | | 36 | 1015869-323 | LIGHT-INDICATOR |
| | | | | 1 | | 35 | 1015869-702 | LIGHT-INDICATOR |
| | | | | 1 | | 34 | 1015869-325 | LIGHT-INDICATOR |
| | | | | 1 | | 33 | 1015869-326 | LIGHT-INDICATOR |
| | | | | 1 | | 32 | 1015869-517 | LIGHT-INDICATOR |
| | | | | 1 | | 31 | 1015869-539 | LIGHT-INDICATOR |
| | | | | 1 | | 30 | 1015869-518 | LIGHT-INDICATOR |
| | | | | 1 | | 29 | 1015869-328 | LIGHT-INDICATOR |
| | | | | | | 28 | | |
| | | | | | | 27 | | |
| SEE NOTE 8 | | | | 3 | | 26 | 1015825-018 | SWITCH, ROTARY |
| | | | | 1 | | 25 | 1015825-017 | SWITCH, ROTARY |
| | | | | 2 | | 24 | 1015825-019 | SWITCH, ROTARY |
| | | | | 1 | | 23 | 1015825-020 | SWITCH, ROTARY |
| | | | | 1 | | 22 | 1016003-10 | RESISTOR, VARIABLE |
| | | | | 1 | | 21 | 1015951-504 | RESISTOR |
| | | | | 3 | | 20 | 1016004-008 | CLAMP |
| | | | | 1 | | 19 | 1015959 | RESISTOR-VARIABLE |
| | | | | 2 | | 18 | MS-91528-2F1B | KNOB, CONTROL |
| | | | | 7 | | 17 | MS-91528-2K2B | KNOB, CONTROL |
| | | | | | | 16 | | |
| | | | | 2 | | 15 | 1900015-061 | HANDLE ASSY |
| | | | | 1 | | 14 | 1900187 | WIRING HARNESS "A" |
| SEE NOTE 8 | | | | 11 | | 13 | 1015802-004 | RELAY-ARMATURE |
| | | | | 1 | | 12 | 1015833-009 | RELAY |
| | | | | 26 | | 11 | 1015837-001 | RELAY, ARMATURE |
| | | | | | | 10 | | |
| SEE NOTE 8 | | | | 1 | | 9 | 1015785-010 | SLIDE ASSY-L.H. |
| | | | | 1 | | 8 | 1015785-009 | SLIDE ASSY-R.H. |
| | | | | 12 | | 7 | 1015860-025 | SPACER |
| | | | | 1 | | 6 | 1900254-011 | COMPONENT BOARD ASSY |
| | | | | 1 | | 5 | 1900231-011 | DIODE BOARD ASSY |
| | | | | 1 | | 4 | 1900230 | BRACKET, MOUNTING (INSEP) ASSY |
| | | | | 1 | | 3 | 1900253 | PLATE, CHASSIS |
| | | | | 1 | | 2 | 1900252 | DRAWER |
| | | | | 1 | | 1 | 1900251 | PANEL, FRONT |
| | QUANTITY REQUIRED | | | 011 | EFFECTIVITY | ITEM NO | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| | | | | | | LIST OF PARTS AND MATERIALS | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 8 | | 94 | 1016005-1 | SHIM, SLIDE LOCATING | |
| | | | 1 | | 93 | 13 THRU 15 | -113 THRU 115 | SEE NOTE 7 |
| | | | 2 | | 92 | 11 THRU 13 | -111 THRU 113 | SEE NOTE 7 |
| | | | 1 | | 91 | 10 THRU 12 | -110 THRU 112 | SEE NOTE 7 |
| | | | 1 | | 90 | 9 THRU 11 | -109 THRU 111 | SEE NOTE 7 |
| | | | 1 | | 89 | 8 THRU 10 | -108 THRU 110 | SEE NOTE 7 |
| | | | 4 | | 88 | 7 THRU 9 | -107 THRU 109 | SEE NOTE 7 |
| | | | 3 | | 87 | 6 THRU 8 | -106 THRU 108 | SEE NOTE 7 |
| | | | 1 | | 86 | 5 THRU 7 | -105 THRU 107 | SEE NOTE 7 |
| | | | 2 | | 85 | MS21919 DG 3 THRU 5 | (1897073-103 THRU 105 CLAMP, CABLE | |
| | | | 8 | | 84 | MS35333-71 | WASHER, LOCK, INTERNAL TOOTH | |
| | | | 16 | | 83 | AN960-C6 | (1897006-026) WASHER, FLAT | |
| | | | 4 | | 82 | 1015981-005 | STANDOFF, HEX, THREADED | |
| QUANTITY REQUIRED | | | 011 | EFFECTIVITY | ITEM NO | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION | |
| | | | | | LIST OF PARTS AND MATERIALS | | | |

| | |
|---|---|
| AN | AN |
| AM | AM |
| AL | AL |
| SHEET 1 | SHEET 2 |
| REVISION STATUS OF SHEETS | |

Ⓐⓛ **REPLACES REV AK WITH CHANGE**

| | | |
|---|---|---|
| 1900004 | 1900004 | -011 |
| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
| APPLICATION | | |

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS +− −− DECIMALS +− −− ANGLES +− −−
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE WISCONSIN
ACSP PN
DRAWN Gschke DATE 25 JUN 63
CHECKED C Pioda 3 JUL 63
APPROVAL L.P. Hurse 7-3-63
APPROVAL [illegible]
NASA APPROVAL W. J. [illegible] 5-26-64
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

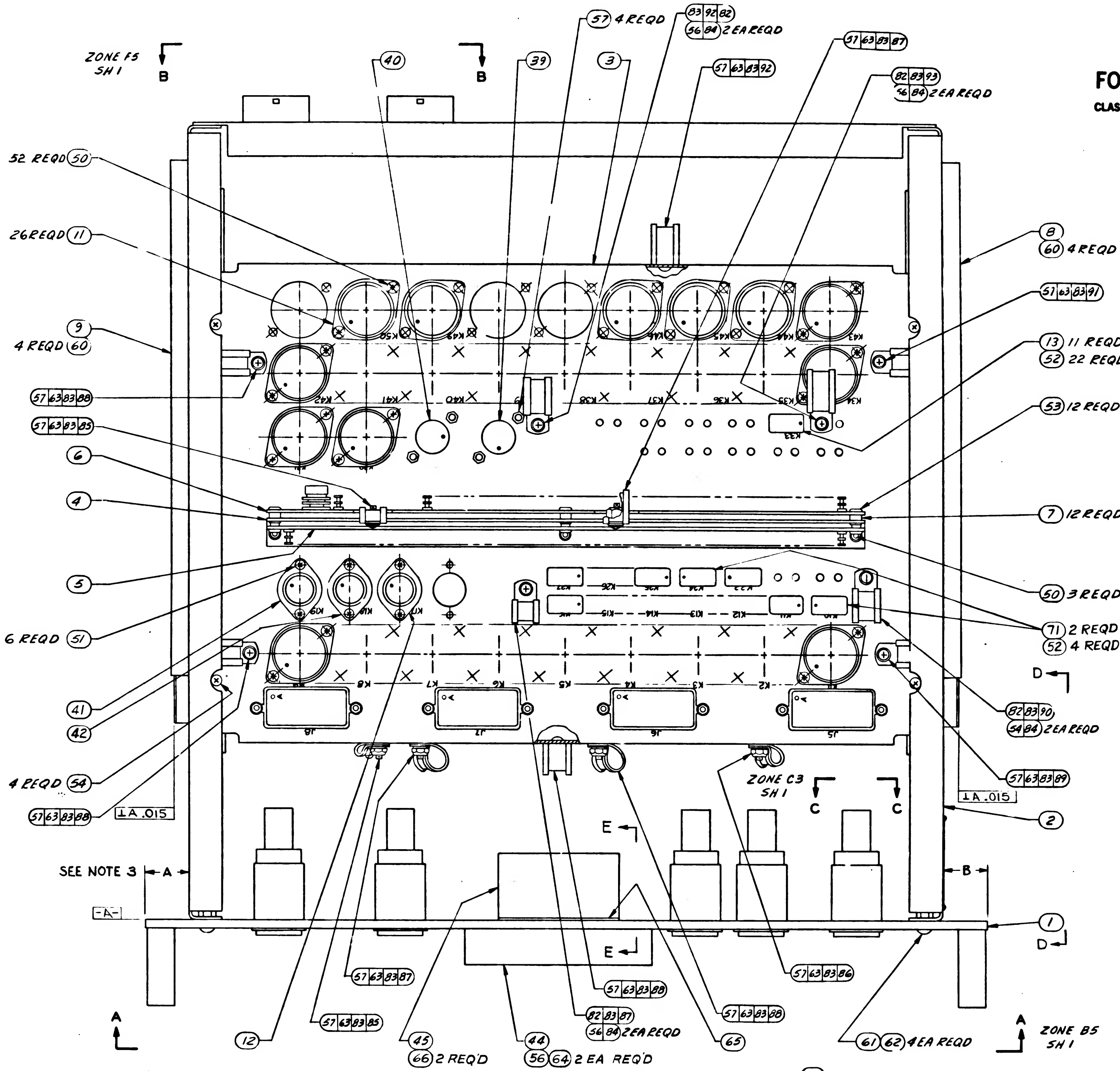
**TEST SELECTOR ASSEMBLY**

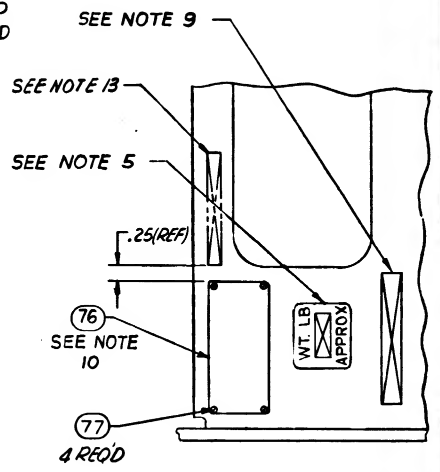
CODE IDENT NO.
SIZE E
1900082
SCALE FULL
SHEET 1 OF 2

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD |
| AL | | REPLACES REV. AK WITH CHANGE PER CM 195512 REVISED PER TDR -FF-3 | | 30 MAR 64 | RJ7 |
| AM | — | CHANGE IN ACCORDANCE WITH CM 195857 | — | 9 APR 64 | J.B. |
| AN | — | CHANGE IN ACCORDANCE WITH CM 196492 TDRR 08835 | — | 27 APR 64 | |

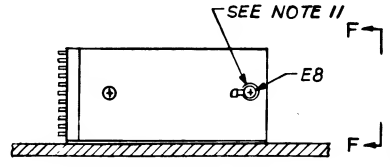
**FOR INFORMATION ONLY**

**CLASS B RELEASE TDR No.__________ DATE**

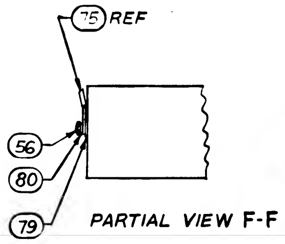




PARTIAL VIEW D-D



PARTIAL VIEW E-E



PARTIAL VIEW F-F

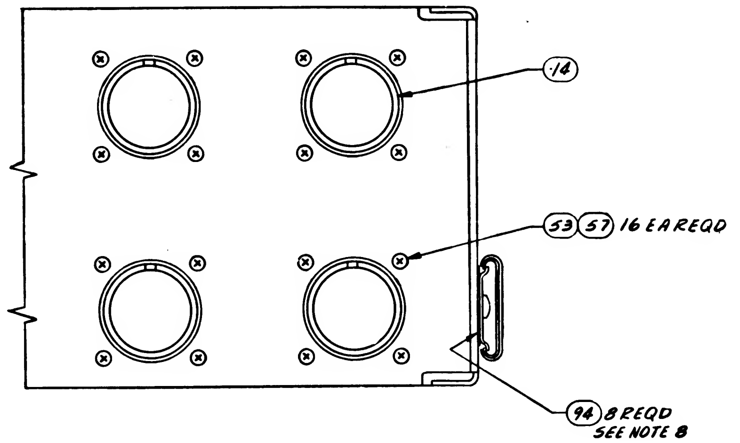
Ⓐⓛ REPLACES REV AK WITH CHANGE

| | | |
|---|---|---|
| UNLESS OTHERWISE SPECIFIED<br>DIMENSIONS ARE IN INCHES<br>TOLERANCES ON<br>FRACTIONS ± DECIMALS ± ANGLES ± | AC SPARK PLUG DIVISION, GMC<br>MILWAUKEE, WISCONSIN | MANNED<br>SPACECRAFT CENTER<br>HOUSTON, TEXAS |
| | ACSP PN | |
| DO NOT SCALE THIS DRAWING | DRAWN Goethke DATE 25 JUN 63<br>CHECKED C. Pryde 3 JUL 63<br>APPROVAL 7-3-63<br>APPROVAL 26 May 64 | TEST SELECTOR ASSEMBLY |
| MATERIAL | NASA APPROVAL W. J. Rhine 5-26-64 | CODE IDENT NO. / SIZE E / 1900082 |
| CONTRACT NAS 9-497 | MIT APPROVAL 26 May 64 | SCALE FULL / SHEET 2 OF 2 |

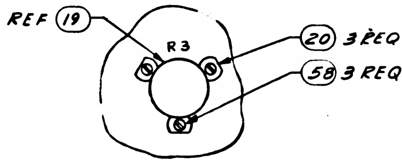
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD |
|---|---|---|---|---|---|
| AL | | REPLACES REV. AK WITH CHANGE PER CM 195512<br>REVISED PER TDR 08853 | — | 30 MAR 64 | |
| AM | — | CHANGE IN ACCORDANCE WITH CM - 195857 | — | 9 APR. 64 | J B |
| AN | - | CHANGE IN ACCORDANCE WITH CM 196492 TDRR 08835 | — | 27 APR 64 | |
| AP | - | CHANGE IN ACCORDANCE WITH CM 197470 TDRR 10691 | — | 8 JUN 64 | |

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. SOLDER PER MIL-STD 440 USING ITEMS 68 AND 69.
3. DIMENSION "A" MUST BE EQUAL TO DIMENSION "B" WITHIN .040
4. DRAWER SLIDE MOUNTING SCREWS AND FRONT PANEL MOUNTING SCREWS SHALL BE SUBJECTED TO TORQUE OF 37-40 IN/LBS AT INSTALLATION.
5. MARK WEIGHT OF ASSEMBLY (39 LBS) PER ND-1002123 ADJACENT TO NAMEPLATE LOCATION.
6. SHIM TO FIT. PEEL OFF EXCESS SHIM STOCK
7. SELECT AS REQUIRED
8. VENDOR ITEM, SEE SPECIFICATION CONTROL DRAWING
9. MARK "SCHEM" AND APPLICABLE SCHEMATIC DRAWING NUMBER PER ND 1002019, .12 HIGH, COLOR BLACK.
10. MARK APPLICABLE CONTRACT NO. AND SERIAL NO. TO ITEM 76 IN ACCORDANCE WITH ND 1002023. LETTERS AND NUMERALS TO BE .06 HIGH.
11. REMOVE EXISTING FLAT HEAD SCREW AND REPLACE WITH ITEM 56
12. SECURE ITEM 59 USING ITEM 81
13. MARK "DWG REV LTR ___" AND APPLICABLE DRAWING REVISION-LETTER PER ND 1002019, .12 HIGH, COLOR BLACK, IN LOCATION SHOWN.



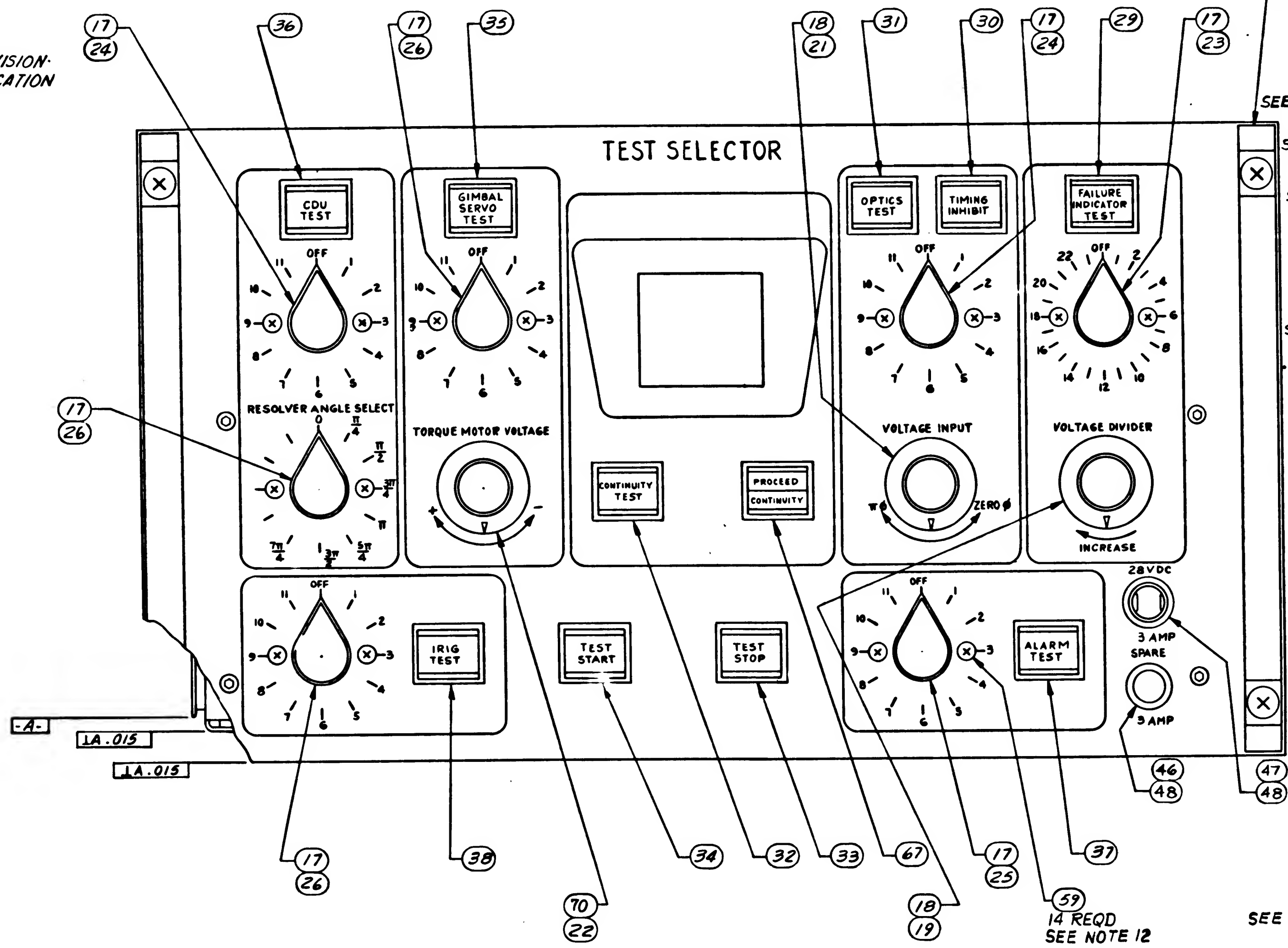
PARTIAL VIEW B - B
ZONE G6 SH 2



PARTIAL VIEW C - C
ZONE C3 SH 2

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No.________ DATE



VIEW A-A
ZONE B2 SH2

| | QUANTITY REQUIRED 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|
| | AR | | 81 | MIL-S-40083(ORD)CL20 | SEALING & RETAINING COMPOUND(ES-2544-3) |
| | | | 80 | | |
| | | | 79 | | |
| | X | | 78 | 1900692 | TEST SELECTOR ELEC. SCHEM. |
| | 4 | | 77 | AN535-00-4 | (1897109-004) SCREW, DRIVE, ROUND HD |
| | 1 | | 76 | 1901304-109 | NAMEPLATE, APOLLO, G&N |
| | 1 | | 75 | 1900690 | WIRING HARNESS "B" |
| | 1 | | 74 | 1900691 | WIRE LIST B-B |
| | 1 | | 73 | 1900689 | WIRE LIST A-A |
| | — | | 72 | PS 1900082 | PROCUREMENT SPECIFICATION |
| SEE NOTE 8 | 2 | | 71 | 1015832-318 | RELAY, SENSITIVE |
| | 1 | | 70 | MS91528-2F2B | KNOB, CONTROL |
| | AR | | 69 | MIL-F-14256<br>QQ-S-571 | FLUX (ES-2798)<br>FLUX TYPE AR (ES-2175 TYPE 1 OR 2) |
| | AR | | 68 | QQ-S-571 | SOLDER SN60 (ES-2175 ALLOY 1) |
| SEE NOTE 8 | 1 | | 67 | 1015869-337 | LIGHT-INDICATOR |
| | 2 | | 66 | 1015912-193 | SCREW |
| | 1 | | 65 | 1900220 | SPACER, DIGITAL READOUT |
| | 2 | | 64 | MS35338-3 | WASHER |
| | 12 | | 63 | MS-35216-27 | SCREW |
| | 4 | | 62 | AN363C1032 | NUT (1896990-011) |
| SEE NOTE 8 | 4 | | 61 | 1006783-45 | SCREW |
| SEE NOTE 8 | 8 | | 60 | 1006783-44 | SCREW |
| | 14 | | 59 | MS-35200-40 | SCREW |
| SEE NOTE 8 | 3 | | 58 | 1000093-14 | SCREW |
| | 32 | | 57 | AN363C632 | NUT (1896990-261) |
| | 11 | | 56 | MS-35216-25 | SCREW |
| SEE NOTE 8 | 8 | | 55 | 1015831-257 | SCREW |
| | 4 | | 54 | MS-35216-39 | SCREW |
| | 28 | | 53 | MS-35216-26 | SCREW |
| | 26 | | 52 | 1016151-004 | NUT |
| | 6 | | 51 | MS-35216-13 | SCREW |
| | 55 | | 50 | MS-35216-24 | SCREW |
| | | | 49 | | |
| | 2 | | 48 | MS-90078-12-1 | FUSE |
| SEE NOTE 8 | 1 | | 47 | 1015873-008 | FUSEHOLDER |
| | 1 | | 46 | MS-26572-1 | FUSEHOLDER |
| SEE NOTE 8 | 1 | | 45 | 1015844-001 | DIGITAL READOUT |
| SEE NOTE 8 | 1 | | 44 | 1015943-001 | BEZEL |
| | | | 43 | | |
| SEE NOTE 8 | 1 | | 42 | 1015833-008 | RELAY |
| SEE NOTE 8 | 1 | | 41 | 1015833-007 | RELAY |
| | 1 | | 40 | 1016082 | TRANSFORMER |
| | 1 | | 39 | 1016034 | TRANSFORMER |
| SEE NOTE 8 | 1 | | 38 | 1015869-329 | LIGHT-INDICATOR |
| SEE NOTE 8 | 1 | | 37 | 1015869-703 | LIGHT-INDICATOR |
| SEE NOTE 8 | 1 | | 36 | 1015869-323 | LIGHT-INDICATOR |
| SEE NOTE 8 | 1 | | 35 | 1015869-702 | LIGHT-INDICATOR |
| SEE NOTE 8 | 1 | | 34 | 1015869-325 | LIGHT-INDICATOR |
| SEE NOTE 8 | 1 | | 33 | 1015869-326 | LIGHT-INDICATOR |
| SEE NOTE 8 | 1 | | 32 | 1015869-517 | LIGHT-INDICATOR |
| SEE NOTE 8 | 1 | | 31 | 1015869-539 | LIGHT-INDICATOR |
| SEE NOTE 8 | 1 | | 30 | 1015869-518 | LIGHT-INDICATOR |
| SEE NOTE 8 | 1 | | 29 | 1015869-328 | LIGHT-INDICATOR |
| | | | 28 | | |
| | | | 27 | | |
| SEE NOTE 8 | 3 | | 26 | 1015825-018 | SWITCH, ROTARY |
| SEE NOTE 8 | 1 | | 25 | 1015825-017 | SWITCH, ROTARY |
| SEE NOTE 8 | 2 | | 24 | 1015825-019 | SWITCH, ROTARY |
| SEE NOTE 8 | 1 | | 23 | 1015825-020 | SWITCH, ROTARY |
| SEE NOTE 8 | 1 | | 22 | 1016003-10 | RESISTOR, VARIABLE |
| SEE NOTE 8 | 1 | | 21 | 1015951-504 | RESISTOR |
| SEE NOTE 8 | 3 | | 20 | 1016004-008 | CLAMP |
| SEE NOTE 8 | 1 | | 19 | 1015959 | RESISTOR-VARIABLE |
| | 2 | | 18 | MS-91528-2F1B | KNOB, CONTROL |
| | 7 | | 17 | MS-91528-2K2B | KNOB, CONTROL |
| | | | 16 | | |
| | 2 | | 15 | 1900015-061 | HANDLE ASSY |
| | 1 | | 14 | 1900187 | WIRING HARNESS "A" |
| SEE NOTE 8 | 11 | | 13 | 1015802-004 | RELAY-ARMATURE |
| SEE NOTE 8 | 1 | | 12 | 1015833-009 | RELAY |
| SEE NOTE 8 | 26 | | 11 | 1015837-001 | RELAY, ARMATURE |
| | | | 10 | | |
| SEE NOTE 8 | 1 | | 9 | 1015785-010 | SLIDE ASSY-L.H. |
| SEE NOTE 8 | 1 | | 8 | 1015785-009 | SLIDE ASSY-R.H. |
| SEE NOTE 8 | 12 | | 7 | 1015860-025 | SPACER |
| | 1 | | 6 | 1900254-011 | COMPONENT BOARD ASSY |
| | 1 | | 5 | 1900231-011 | DIODE BOARD ASSY |
| | 1 | | 4 | 1900230 | BRACKET, MOUNTING (INSEP) ASSY |
| | 1 | | 3 | 1900253 | PLATE, CHASSIS |
| | 1 | | 2 | 1900252 | DRAWER |
| | 1 | | 1 | 1900251 | PANEL, FRONT |

LIST OF PARTS AND MATERIALS

| | QUANTITY REQUIRED 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|
| | 8 | | 94 | 1016005-1 | SHIM, SLIDE LOCATING |
| SEE NOTE 7 | 1 | | 93 | 13 THRU 15 | -113 THRU 115 |
| SEE NOTE 7 | 2 | | 92 | 11 THRU 13 | -111 THRU 113 |
| SEE NOTE 7 | 1 | | 91 | 10 THRU 12 | -110 THRU 112 |
| SEE NOTE 7 | 1 | | 90 | 9 THRU 11 | -109 THRU 111 |
| SEE NOTE 7 | 1 | | 89 | 8 THRU 10 | -108 THRU 110 |
| SEE NOTE 7 | 4 | | 88 | 7 THRU 9 | -107 THRU 109 |
| SEE NOTE 7 | 3 | | 87 | 6 THRU 8 | -106 THRU 108 |
| SEE NOTE 7 | 1 | | 86 | 5 THRU 7 | -105 THRU 107 |
| SEE NOTE 7 | 2 | | 85 | MS21919 D6 3 THRU 5 | (1897073-103 THRU 105 CLAMP, CABLE |
| | 9 | | 84 | MS35333-71 | WASHER, LOCK, INTERNAL TOOTH |
| | 17 | | 83 | AN960-C6 | (1897006-026) WASHER, FLAT |
| | 4 | | 82 | 1015981-005 | STANDOFF, HEX, THREADED |

LIST OF PARTS AND MATERIALS

| SHEET 1 | SHEET 2 |
|---|---|
| AP | AP |
| AN | AN |
| AM | AM |
| AL | AL |

REVISION STATUS OF SHEETS

Ⓐⓛ REPLACES REV AK WITH CHANGE

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900004 | 1900004 | -011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + — — —
DECIMALS + — — —
ANGLES + — — —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Geschke DATE 25 JUN 63
CHECKED C Pinda 3 JUL 63
APPROVAL L P Kunse 7-3-63
APPROVAL 26 Aug 63
NASA APPROVAL 5-26-64
MIT APPROVAL

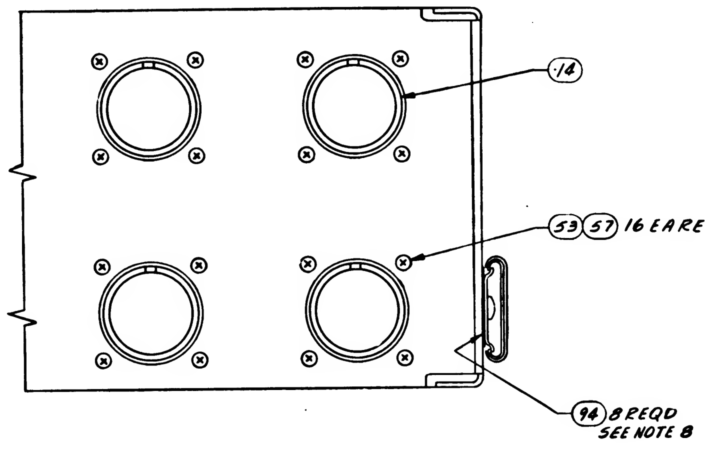
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

TEST SELECTOR ASSEMBLY

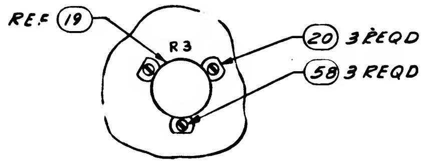
CODE IDENT NO.
SIZE E
1900082
SCALE FULL
SHEET 1 OF 2

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. SOLDER PER MIL-STD 440 USING ITEMS 68 AND 69.
3. DIMENSION "A" MUST BE EQUAL TO DIMENSION "B" WITHIN .040
4. DRAWER SLIDE MOUNTING SCREWS AND FRONT PANEL MOUNTING SCREWS SHALL BE SUBJECTED TO TORQUE OF 37-40 IN/LBS AT INSTALLATION.
5. MARK WEIGHT OF ASSEMBLY (39 LBS) PER ND-1002123 ADJACENT TO NAMEPLATE LOCATION.
6. SHIM TO FIT. PEEL OFF EXCESS SHIM STOCK
7. SELECT AS REQUIRED
8. VENDOR ITEM, SEE SPECIFICATION CONTROL DRAWING
9. MARK "SCHEM" AND APPLICABLE SCHEMATIC DRAWING NUMBER PER ND 1002019, .12 HIGH, COLOR BLACK.
10. MARK APPLICABLE CONTRACT NO. AND SERIAL NO. TO ITEM 76 IN ACCORDANCE WITH ND 1002023. LETTERS AND NUMERALS TO BE .06 HIGH.
11. REMOVE EXISTING FLAT HEAD SCREW AND REPLACE WITH ITEM 56
12. (AL) SECURE ITEM 55 AND 59 USING ITEM 81.
13. MARK "DWG REV LTR ___" AND APPLICABLE DRAWING REVISION LETTER PER ND 1002019, .12 HIGH, COLOR BLACK, IN LOCATION SHOWN.



PARTIAL VIEW B-B
ZONE G6 SH 2



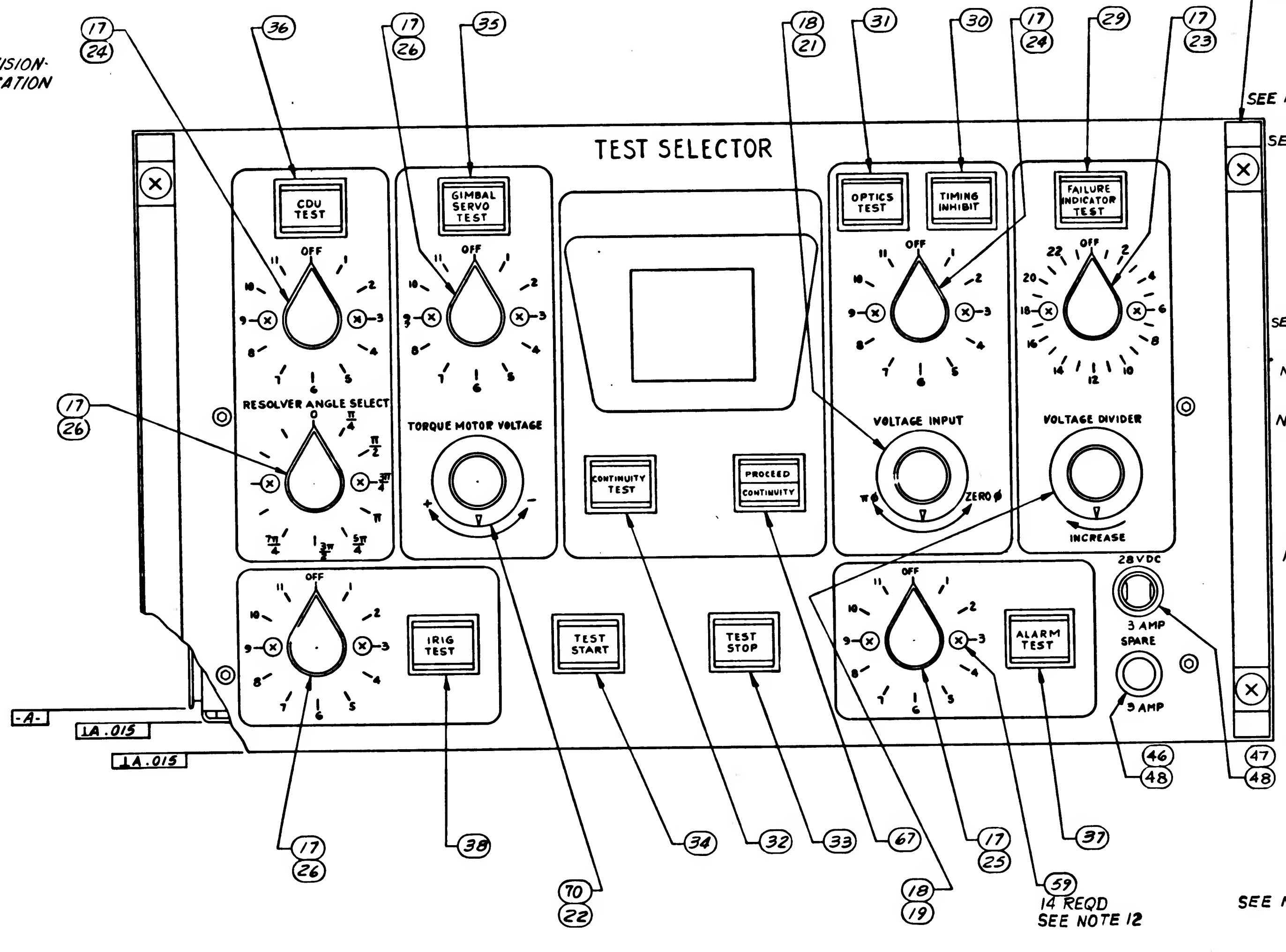
PARTIAL VIEW C-C
ZONE C3 SH 2

REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD |
|---|---|---|---|---|---|
| AL | | REPLACES REV. AK WITH CHANGE PER CM 195512<br>REVISED PER TDR 08833 | — | 30 MAR 64 | |
| AM | — | CHANGE IN ACCORDANCE WITH CM-195857 | — | 9 APR 64 | J.B. |
| AN | - | CHANGE IN ACCORDANCE WITH CM 196492 TDRR 08835 | — | 27 APR 64 | |
| AP | - | CHANGE IN ACCORDANCE WITH CM 197470 TDRR 10691 | — | 8 JUN 64 | FL |
| AR | - | REVISED PER TDRR NO. 10699 | — | 15 JUL 64 | J.E.G. |

**FOR INFORMATION ONLY**
CLASS B RELEASE TDR No.______ DATE

2 REQD (15)
8 REQD (55)



VIEW A-A
ZONE B2 SH2

| | | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|---|
| | | | | AR | | 81 | MIL-S-40083(ORD)CL20 | SEALING & RETAINING COMPOUND (ES-2544-3) |
| | | | | | | 80 | | |
| | | | | | | 79 | | |
| | | | | X | | 78 | 1900692 | TEST SELECTOR ELEC. SCHEM. |
| | | | | 4 | | 77 | AN535-00-4 | (1897109-004) SCREW, DRIVE, ROUND HD |
| | | | | 1 | | 76 | 1901304-109 | NAMEPLATE, APOLLO, G&N |
| | | | | 1 | | 75 | 1900690 | WIRING HARNESS "B" |
| | | | | 1 | | 74 | 1900691 | WIRE LIST B-B |
| | | | | 1 | | 73 | 1900689 | WIRE LIST A-A |
| | | | | — | | 72 | PS 1900082 | PROCUREMENT SPECIFICATION |
| SEE NOTE 8 | | | | 2 | | 71 | 1015832-318 | RELAY, SENSITIVE |
| | | | | 1 | | 70 | MS91528-2F2B | KNOB, CONTROL |
| | | | | | | | MIL-F-14256 | FLUX (ES-2798) |
| | | | | AR | | 69 | QQ-S-571 | FLUX TYPE AR (ES-2175 TYPE 1 OR 2) |
| | | | | AR | | 68 | QQ-S-571 | SOLDER SN60 (ES-2175 ALLOY 1) |
| SEE NOTE 8 | | | | 1 | | 67 | 1015869-337 | LIGHT-INDICATOR |
| | | | | 2 | | 66 | 1015912-193 | SCREW |
| | | | | 1 | | 65 | 1900220 | SPACER, DIGITAL READOUT |
| | | | | 2 | | 64 | MS35338-3 | WASHER |
| | | | | 12 | | 63 | MS-35216-27 | SCREW |
| | | | | 4 | | 62 | AN363C1032 | NUT (1896990-011) |
| SEE NOTE 8 | | | | 4 | | 61 | 1006783-45 | SCREW |
| | | | | 8 | | 60 | 1006783-44 | SCREW |
| | | | | 14 | | 59 | MS-35200-40 | SCREW |
| SEE NOTE 8 | | | | 3 | | 58 | 1000093-14 | SCREW |
| | | | | 32 | | 57 | AN363C632 | NUT (1896990-261) |
| | | | | 11 | | 56 | MS-35216-25 | SCREW |
| | | | | 8 | | 55 | AN507C832R12 | SCREW (1897003-568) |
| | | | | 4 | | 54 | MS-35216-39 | SCREW |
| | | | | 29 | | 53 | MS-35216-26 | SCREW |
| | | | | 26 | | 52 | 1016151-004 | NUT |
| | | | | 6 | | 51 | MS-35216-13 | SCREW |
| | | | | 55 | | 50 | MS-35216-24 | SCREW |
| | | | | | | 49 | | |
| | | | | 2 | | 48 | MS-90078-12-1 | FUSE |
| SEE NOTE 8 | | | | 1 | | 47 | 1015873-008 | FUSEHOLDER |
| | | | | 1 | | 46 | MS-26572-1 | FUSEHOLDER |
| SEE NOTE 8 | | | | 1 | | 45 | 1015844-001 | DIGITAL READOUT |
| | | | | 1 | | 44 | 1015943-001 | BEZEL |
| | | | | | | 43 | | |
| SEE NOTE 8 | | | | 1 | | 42 | 1015833-008 | RELAY |
| | | | | 1 | | 41 | 1015833-007 | RELAY |
| | | | | 1 | | 40 | 1016082 | TRANSFORMER |
| | | | | 1 | | 39 | 1016034 | TRANSFORMER |
| SEE NOTE 8 | | | | 1 | | 38 | 1015869-329 | LIGHT-INDICATOR |
| | | | | 1 | | 37 | 1015869-703 | LIGHT-INDICATOR |
| | | | | 1 | | 36 | 1015869-323 | LIGHT-INDICATOR |
| | | | | 1 | | 35 | 1015869-702 | LIGHT-INDICATOR |
| | | | | 1 | | 34 | 1015869-325 | LIGHT-INDICATOR |
| | | | | 1 | | 33 | 1015869-326 | LIGHT-INDICATOR |
| | | | | 1 | | 32 | 1015869-517 | LIGHT-INDICATOR |
| | | | | 1 | | 31 | 1015869-539 | LIGHT-INDICATOR |
| | | | | 1 | | 30 | 1015869-518 | LIGHT-INDICATOR |
| | | | | 1 | | 29 | 1015869-328 | LIGHT-INDICATOR |
| | | | | | | 28 | | |
| | | | | | | 27 | | |
| SEE NOTE 8 | | | | 3 | | 26 | 1015825-018 | SWITCH, ROTARY |
| | | | | 1 | | 25 | 1015825-017 | SWITCH, ROTARY |
| | | | | 2 | | 24 | 1015825-019 | SWITCH, ROTARY |
| | | | | 1 | | 23 | 1015825-020 | SWITCH, ROTARY |
| | | | | 1 | | 22 | 1016003-10 | RESISTOR, VARIABLE |
| | | | | 1 | | 21 | 1015951-504 | RESISTOR |
| | | | | 3 | | 20 | 1016004-008 | CLAMP |
| | | | | 1 | | 19 | 1015959 | RESISTOR-VARIABLE |
| | | | | 2 | | 18 | MS-91528-2F1B | KNOB, CONTROL |
| | | | | 7 | | 17 | MS-91528-2K2B | KNOB, CONTROL |
| | | | | | | 16 | | |
| | | | | 2 | | 15 | 1900015-061 | HANDLE ASSY |
| | | | | 1 | | 14 | 1900187 | WIRING HARNESS "A" |
| SEE NOTE 8 | | | | 11 | | 13 | 1015802-004 | RELAY-ARMATURE |
| | | | | 1 | | 12 | 1015833-009 | RELAY |
| | | | | 26 | | 11 | 1015837-001 | RELAY, ARMATURE |
| | | | | | | 10 | | |
| SEE NOTE 8 | | | | 1 | | 9 | 1015785-010 | SLIDE ASSY-L.H. |
| | | | | 1 | | 8 | 1015785-009 | SLIDE ASSY-R.H. |
| | | | | 12 | | 7 | 1015860-025 | SPACER |
| | | | | 1 | | 6 | 1900254-011 | COMPONENT BOARD ASSY |
| | | | | 1 | | 5 | 1900231-011 | DIODE BOARD ASSY |
| | | | | 1 | | 4 | 1900230 | BRACKET, MOUNTING (INSEP) ASSY |
| | | | | 1 | | 3 | 1900253 | PLATE, CHASSIS |
| | | | | 1 | | 2 | 1900252 | DRAWER |
| | | | | 1 | | 1 | 1900251 | PANEL, FRONT |

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION | |
|---|---|---|---|---|---|---|---|---|
| | | | 8 | | 94 | 1016005-1 | SHIM, SLIDE LOCATING | |
| | | | 1 | | 93 | 13 THRU 15 | -113 THRU 115 | SEE NOTE 7 |
| | | | 2 | | 92 | 11 THRU 13 | -111 THRU 113 | |
| | | | 1 | | 91 | 10 THRU 12 | -110 THRU 112 | |
| | | | 1 | | 90 | 9 THRU 11 | -109 THRU 111 | |
| | | | 1 | | 89 | 8 THRU 10 | -108 THRU 110 | |
| | | | 4 | | 88 | 7 THRU 9 | -107 THRU 109 | |
| | | | 3 | | 87 | 6 THRU 8 | -106 THRU 108 | |
| | | | 1 | | 86 | 5 THRU 7 | -105 THRU 107 | |
| | | | 2 | | 85 | MS21919 D6 3 THRU 5 | (1897073-103 THRU 105 CLAMP, CABLE | |
| | | | 9 | | 84 | MS35333-71 | WASHER, LOCK, INTERNAL TOOTH | |
| | | | 17 | | 83 | AN960-C6 | (1897006-026) WASHER, FLAT | |
| | | | 4 | | 82 | 1015981-005 | STANDOFF, HEX, THREADED | |

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

| | |
|---|---|
| AR | AP |
| AP | AP |
| AN | AN |
| AM | AM |
| AL | AL |
| SHEET 1 | SHEET 2 |

REVISION STATUS OF SHEETS

(AL) REPLACES REV AK WITH CHANGE

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900004 | 1900004 | -011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN DATE 25 JUN 63
CHECKED C Pr... 3 JUL 63
APPROVAL L P ... 7-3-63
APPROVAL ... 26 Aug 63
NASA APPROVAL 5-26-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

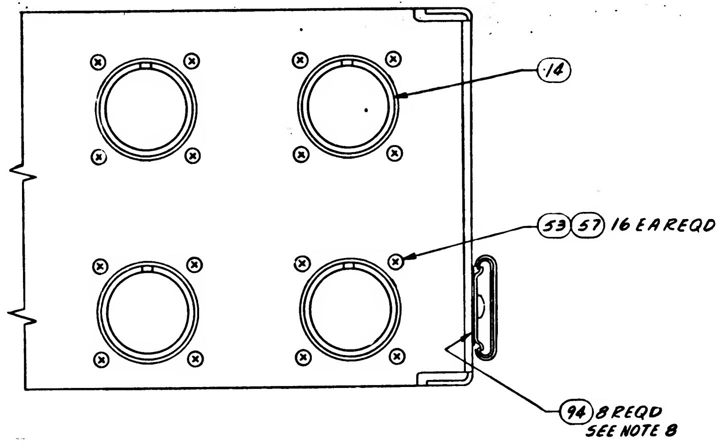
TEST SELECTOR ASSEMBLY

CODE IDENT NO. | SIZE E | 1900082
SCALE FULL | SHEET 1 OF 2

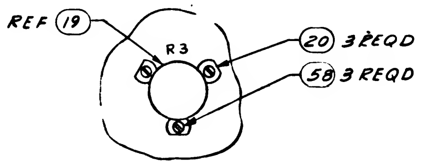
1900082 AR

NOTES:

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. SOLDER PER MIL-STD 440 USING ITEMS 68 AND 69.
3. DIMENSION "A" MUST BE EQUAL TO DIMENSION "B" WITHIN .040
4. DRAWER SLIDE MOUNTING SCREWS AND FRONT PANEL MOUNTING SCREWS SHALL BE SUBJECTED TO TORQUE OF 37-40 IN/LBS AT INSTALLATION.
5. MARK WEIGHT OF ASSEMBLY (39 LBS) PER ND-1002123 ADJACENT TO NAMEPLATE LOCATION.
6. SHIM TO FIT. PEEL OFF EXCESS SHIM STOCK
7. SELECT AS REQUIRED
8. VENDOR ITEM, SEE SPECIFICATION CONTROL DRAWING
9. MARK "SCHEM" AND APPLICABLE SCHEMATIC DRAWING NUMBER PER ND 1002019, .12 HIGH, COLOR BLACK.
10. MARK APPLICABLE CONTRACT NO. AND SERIAL NO. TO ITEM 76 IN ACCORDANCE WITH ND 1002023. LETTERS AND NUMERALS TO BE .06 HIGH.
11. REMOVE EXISTING FLAT HEAD SCREW AND REPLACE WITH ITEM 56
12. (AR) SECURE ITEM 55 AND 59 USING ITEM 81.
13. MARK "DWG REV LTR ___" AND APPLICABLE DRAWING REVISION LETTER PER ND 1002019, .12 HIGH, COLOR BLACK, IN LOCATION SHOWN.



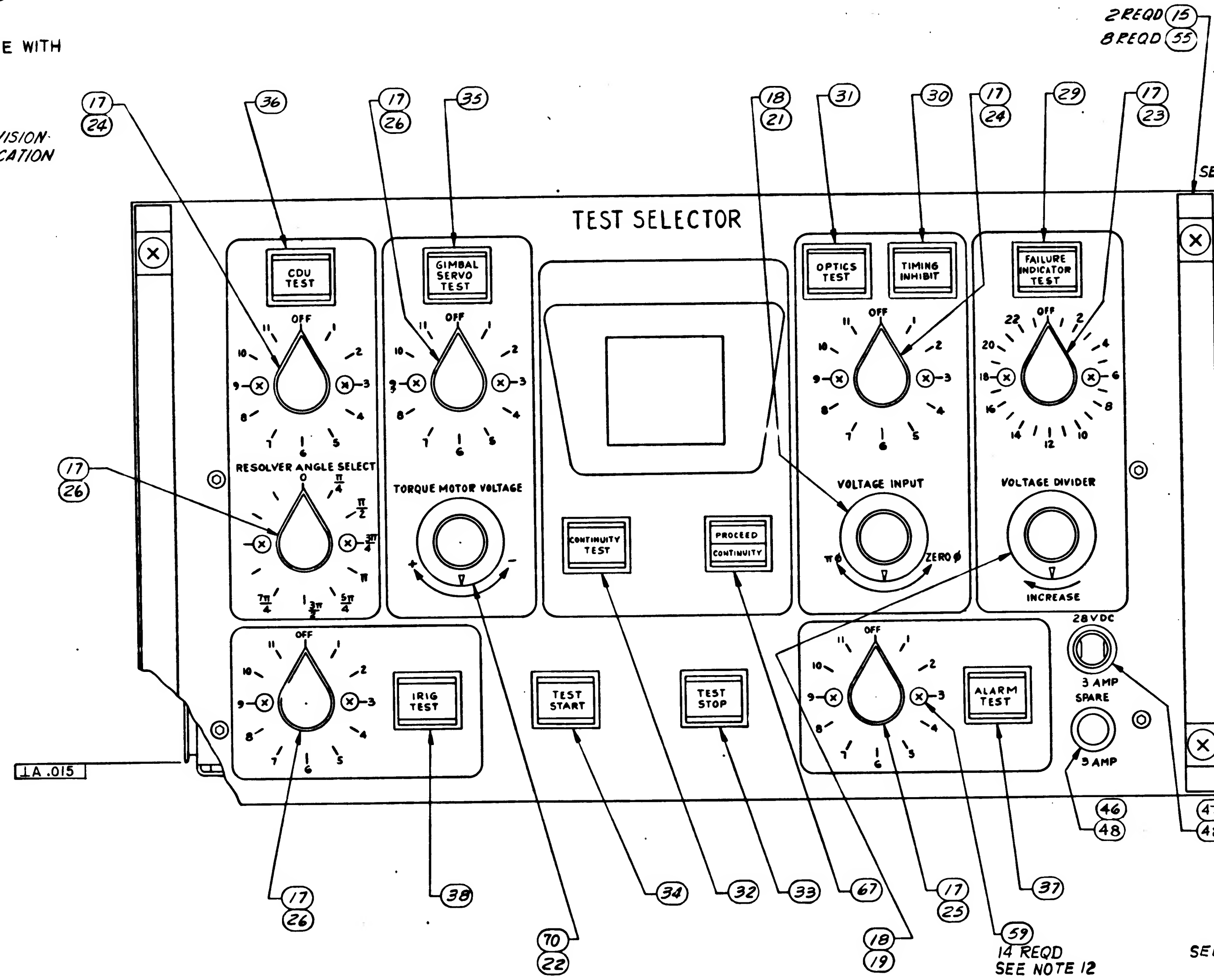
PARTIAL VIEW B-B
ZONE G6 SH 2



PARTIAL VIEW C-C
ZONE C3 SH 2

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No.________ DATE



VIEW A-A
ZONE B2 SH2

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD |
| AL | | REPLACES REV. AK WITH CHANGE PER CM 195512<br>REVISED PER TDR 5CC93 | — | 30 MAR 64 | |
| AM | — | CHANGE IN ACCORDANCE WITH CM - 195857 CC 34 | — | 9 APR 64 | J.B. |
| AN | - | CHANGE IN ACCORDANCE WITH CM 196492 TDRR 08835 | — | 27 APR 64 | JC |
| AP | - | CHANGE IN ACCORDANCE WITH CM 197470 TDRR 10691 | — | 8 JUN 64 | FL |
| AR | - | REVISED PER TDRR NO. 10699 | — | 15 JUL 64 | JJJ J.E.G. |
| AS | - | REVISED PER TDRR 11275 | — | 5 AUG 64 | JWP DAS |

| | QUANTITY REQUIRED 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|
| | AR | | 81 | MIL-S-40083(ORD)CL20 | SEALING & RETAINING COMPOUND (ES-2544-3) |
| | | | 80 | | |
| | | | 79 | | |
| | X | | 78 | 1900692 | TEST SELECTOR ELEC. SCHEM. |
| | 4 | | 77 | AN535-00-4 | (1897109-004) SCREW, DRIVE, ROUND HD |
| | 1 | | 76 | 1901304-109 | NAMEPLATE, APOLLO, G&N |
| | 1 | | 75 | 1900690 | WIRING HARNESS "B" |
| | 1 | | 74 | 1900691 | WIRE LIST B-B |
| | 1 | | 73 | 1900689 | WIRE LIST A-A |
| | — | | 72 | PS 1900082 | PROCUREMENT SPECIFICATION |
| SEE NOTE 8 | 2 | | 71 | 1015832-318 | RELAY, SENSITIVE |
| | 1 | | 70 | MS91528-2F2B | KNOB, CONTROL |
| | | | | MIL-F-14256 | FLUX (ES-2798) |
| | AR | | 69 | QQ-S-571 | FLUX TYPE AR (ES-2175 TYPE 1 OR 2) |
| | AR | | 68 | QQ-S-571 | SOLDER SN60 (ES-2175 ALLOY 1) |
| SEE NOTE 8 | 1 | | 67 | 1015869-337 | LIGHT-INDICATOR |
| | 2 | | 66 | 1015912-193 | SCREW |
| | 1 | | 65 | 1900220 | SPACER, DIGITAL READOUT |
| | 2 | | 64 | MS35338-3 | WASHER |
| | 12 | | 63 | MS-35216-27 | SCREW |
| | 4 | | 62 | AN363C1032 | NUT (1896990-011) |
| SEE NOTE 8 | 4 | | 61 | 1006783-45 | SCREW |
| | 8 | | 60 | 1006783-44 | SCREW |
| | 14 | | 59 | MS-35200-40 | SCREW |
| SEE NOTE 8 | 3 | | 58 | 1000093-14 | SCREW |
| | 32 | | 57 | AN363C632 | NUT (1896990-261) |
| | 11 | | 56 | MS-35216-25 | SCREW |
| | 8 | | 55 | AN507C832R12 | SCREW (1897003-568) |
| | 4 | | 54 | MS-35216-39 | SCREW |
| | 28 | | 53 | MS-35216-26 | SCREW |
| | 26 | | 52 | 1016151-004 | NUT |
| | 6 | | 51 | MS-35216-13 | SCREW |
| | 55 | | 50 | MS-35216-24 | SCREW |
| | | | 49 | | |
| | 2 | | 48 | MS-90078-12-1 | FUSE |
| SEE NOTE 8 | 1 | | 47 | 1015873-008 | FUSEHOLDER |
| | 1 | | 46 | MS-26572-1 | FUSEHOLDER |
| SEE NOTE 8 | 1 | | 45 | 1015844-001 | DIGITAL READOUT |
| | 1 | | 44 | 1015943-001 | BEZEL |
| | | | 43 | | |
| SEE NOTE 8 | 1 | | 42 | 1015833-008 | RELAY |
| | 1 | | 41 | 1015833-007 | RELAY |
| | 1 | | 40 | 1016082 | TRANSFORMER |
| | 1 | | 39 | 1016034 | TRANSFORMER |
| SEE NOTE 8 | 1 | | 38 | 1015869-329 | LIGHT-INDICATOR |
| | 1 | | 37 | 1015869-703 | LIGHT-INDICATOR |
| | 1 | | 36 | 1015869-323 | LIGHT-INDICATOR |
| | 1 | | 35 | 1015869-702 | LIGHT-INDICATOR |
| | 1 | | 34 | 1015869-325 | LIGHT-INDICATOR |
| | 1 | | 33 | 1015869-326 | LIGHT-INDICATOR |
| | 1 | | 32 | 1015869-517 | LIGHT-INDICATOR |
| | 1 | | 31 | 1015869-539 | LIGHT-INDICATOR |
| | 1 | | 30 | 1015869-518 | LIGHT-INDICATOR |
| | 1 | | 29 | 1015869-328 | LIGHT-INDICATOR |
| | | | 28 | | |
| | | | 27 | | |
| SEE NOTE 8 | 3 | | 26 | 1015825-018 | SWITCH, ROTARY |
| | 1 | | 25 | 1015825-017 | SWITCH, ROTARY |
| | 2 | | 24 | 1015825-019 | SWITCH, ROTARY |
| | 1 | | 23 | 1015825-020 | SWITCH, ROTARY |
| | 1 | | 22 | 1016003-10 | RESISTOR, VARIABLE |
| | 1 | | 21 | 1015951-504 | RESISTOR |
| | 3 | | 20 | 1016004-008 | CLAMP |
| | 1 | | 19 | 1015959 | RESISTOR-VARIABLE |
| | 2 | | 18 | MS-91528-2F1B | KNOB, CONTROL |
| | 7 | | 17 | MS-91528-2K2B | KNOB, CONTROL |
| | | | 16 | | |
| | 2 | | 15 | 1900015-061 | HANDLE ASSY |
| | 1 | | 14 | 1900187 | WIRING HARNESS "A" |
| SEE NOTE 8 | 11 | | 13 | 1015802-004 | RELAY-ARMATURE |
| | 1 | | 12 | 1015833-009 | RELAY |
| | 26 | | 11 | 1015837-001 | RELAY, ARMATURE |
| | | | 10 | | |
| SEE NOTE 8 | 1 | | 9 | 1015785-010 | SLIDE ASSY-L.H. |
| | 1 | | 8 | 1015785-009 | SLIDE ASSY-R.H. |
| | 12 | | 7 | 1015860-025 | SPACER |
| | 1 | | 6 | 1900254-011 | COMPONENT BOARD ASSY |
| | 1 | | 5 | 1900231-011 | DIODE BOARD ASSY |
| | 1 | | 4 | 1900230 | BRACKET, MOUNTING (INSEP) ASSY |
| | 1 | | 3 | 1900253 | PLATE, CHASSIS |
| | 1 | | 2 | 1900252 | DRAWER |
| | 1 | | 1 | 1900251 | PANEL, FRONT |

LIST OF PARTS AND MATERIALS

| | QUANTITY REQUIRED 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|
| | 8 | | 94 | 1016005-1 | SHIM, SLIDE LOCATING |
| SEE NOTE 7 | 1 | | 93 | 13 THRU 15 | -113 THRU 115 |
| | 2 | | 92 | 11 THRU 13 | -111 THRU 113 |
| | 1 | | 91 | 10 THRU 12 | -110 THRU 112 |
| | 1 | | 90 | 9 THRU 11 | -109 THRU 111 |
| | 1 | | 89 | 8 THRU 10 | -108 THRU 110 |
| | 4 | | 88 | 7 THRU 9 | -107 THRU 109 |
| | 3 | | 87 | 6 THRU 8 | -106 THRU 108 |
| | 1 | | 86 | 5 THRU 7 | -105 THRU 107 |
| | 2 | | 85 | MS21919 D6 3 THRU 5 | (1897073-103 THRU 105 CLAMP, CABLE |
| | 9 | | 84 | MS35333-71 | WASHER, LOCK, INTERNAL TOOTH |
| | 17 | | 83 | AN960-C6 | (1897006-026) WASHER, FLAT |
| | 4 | | 82 | 1015981-005 | STANDOFF, HEX, THREADED |

LIST OF PARTS AND MATERIALS

| SHEET 1 | SHEET 2 |
|---|---|
| AS | AP |
| AR | AP |
| AP | AP |
| AN | AN |
| AM | AM |
| AL | AL |

REVISION STATUS OF SHEETS

**(AL) REPLACES REV AK WITH CHANGE**

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900004 | 1900004 | -011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Geschke DATE 25 JUN 63
CHECKED C Pioda 3 JUL 63
APPROVAL L P Kurse 7-3-63
APPROVAL 26 Aug 64
NASA APPROVAL 8-26-64
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

TEST SELECTOR ASSEMBLY

CODE IDENT NO.
SIZE E
1900082
SCALE FULL
SHEET 1 OF 2

B 1900082

REVISIONS

| SYM | ZONE | DESCRIPTION | | DATE | APPD. |
|---|---|---|---|---|---|
| A | | P/N 1015837-001 WAS QUANTITY 36<br>P/N 1015802-001 WAS QUANTITY 5 | XC<br>105403 | 5 MAY 63 | |
| A1 | | ADDED P/N'S 1015833-001, 1015833-002, 1015833-009 TO LIST OF MATERIAL. | XC<br>36535 | 5 MAY 63 | |
| B | | (1) ADDED "ASSEMBLY" TO TITLE.<br>(2) ADDED TO LIST OF MATERIAL: P/N-1015826-296 SCREW, FLAT HEAD HEX SOCKET. | | | WSK<br>22 May 63 |

**FOR INFORMATION ONLY**

**CLASS B RELEASE TDR No.** 01314 **DATE** 22 May 63

| QUANTITY REQUIRED | | | | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | 011 | | | | |
| | | | 2 | | | 1015833-009 | THERMAL RELAY |
| | | | 1 | | | 1015833-002 | THERMAL RELAY |
| | | | 1 | | | 1015833-001 | THERMAL RELAY |
| | | | | | | 1015826-296 | SCREW, FLAT HEAD, HEX SOCKET |
| | | | 1 | | | 1015785-010 | SLIDE, L.H. |
| | | | 1 | | | 1015785-009 | SLIDE, R.H. |
| | | | 2 | | | 1900015-041 | HANDLES |
| | | | 1 | | | MS3127-24-61PW | CONNECTOR |
| | | | 1 | | | MS3127-24-61P | CONNECTOR |
| | | | 26 | | | 1015802-001 | RELAY - 2PDT |
| | | | 17 | | | 1015837-001 | RELAY - 6PDT |

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900004 | 1900004 | |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ + +
− − −

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN R. Karling DATE 25 APR 63
CHECKED 29 APR 63
APPROVAL amBray 29 APR 63
APPROVAL 29 Apr 63

NASA APPROVAL 5-22-63
22 May 63

MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

SELECTOR, TEST
ASSEMBLY

CODE IDENT NO.
SIZE D
1900082

SCALE
SHEET

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1900082 E

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | | DATE | APPD. |
| A | | P/N 1015837-001 WAS QUANTITY 36<br>P/N 1015802-001 WAS QUANTITY 5 | MXC 185403 | 6 MAY 63 | |
| A1 | | ADDED P/N'S 1015833-001, 1015833-002, 1015833-009 TO LIST OF MATERIAL. | MXC 186535 | 16 MAY 63 | |
| B | | (1) ADDED "ASSEMBLY" TO TITLE.<br>(2) ADDED TO LIST OF MATERIAL: P/N-1015826-296 SCREW, FLAT HEAD, HEX SOCKET. PER MXC 187189 | | | WSK 22 May 63 |
| B1 | | CHANGED PER MXC 186812 | | 18 JUN 63 | RB |
| B2 | | CHANGED PER MXC 187258 | | 18 JUN 63 | RB |
| C | | CHANGED PER MXC 187310 | | 18 JUN 63 | RB J. Boysen |
| D | | CHANGED IN ACCORDANCE WITH MXC 187432. | | 2 JUL 63 | JGL |
| E | | REPLACED WITH CHANGE BY REVISION 'F' PER MXC 187967 | TDPR 02376 | 12 JUL 63 | JLC |

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01314 DATE 22 May 63

Ⓔ REPLACED WITH CHANGE BY REVISION "F" PER MXC 187967

| QUANTITY REQUIRED | | | | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | 011 | | | LIST OF PARTS AND MATERIALS | |
| | | | 100 | | | 1015817-424 | SOCKET-CONTACT |
| | | | 2 | | | 1015868-500 | CONNECTOR - PLUG |
| | | | 2 | | | 1015867-500 | CONNECTOR - RECEPTACLE |
| | | | 3 | | | 1015832-318 | RELAY - SENSITIVE |
| | | | 1 | | | 1015825-13 | SWITCH - ROTARY |
| | | | 2 | | | 1015825-12 | SWITCH - ROTARY |
| | | | 1 | | | 1015825-11 | SWITCH - ROTARY |
| | | | 1 | | | 1015825-10 | SWITCH - ROTARY |
| | | | 1 | | | 1015825-9 | SWITCH - ROTARY |
| | | | 2 | | | 1015833-009 | THERMAL RELAY |
| | | | 1 | | | 1015833-008 | THERMAL RELAY |
| | | | 1 | | | 1015833-007 | THERMAL RELAY |
| | | | | | | 1015826-296 | SCREW, FLAT HEAD, HEX SOCKET |
| | | | 1 | | | 1015785-010 | SLIDE, L.H. |
| | | | 1 | | | 1015785-009 | SLIDE, R.H. |
| | | | 2 | | | 1900015-041 | HANDLES |
| | | | 1 | | | MS3127E-24-61PW | CONNECTOR |
| | | | 1 | | | MS3127E-24-61P | CONNECTOR |
| | | | 14 | | | 1015802-004 | RELAY - 2PDT |
| | | | 27 | | | 1015837-001 | RELAY - 6PDT |

| QUANTITY REQUIRED | | | | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | 011 | | | LIST OF PARTS AND MATERIALS | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | 1 | | | 1015959 | RESISTOR-VARIABLE |
| | | | 1 | | | 1015958 | RESISTOR-VARIABLE |
| | | | 1 | | | 1015951 | RESISTOR-VARIABLE |
| | | | 1 | | | 1015844-1 | DIGITAL READOUT |
| | | | 1 | | | 2N1874A (1896966-118) | SEMICOND. DEVICE DIODE (MIL-S-19500) |
| | | | 1 | | | 1015943-001 | BEZEL (2 DIGIT) |
| | | | 1 | | | MS3127E-24-61PY | CONNECTOR |
| | | | 1 | | | MS3127E-24-61PX | CONNECTOR |
| | | | 2 | | | RC32GF122J (1896953-065) | RESISTOR (MIL-R-11) |
| | | | 35 | | | IN645M (1896966-004) | SEMICOND. DEVICE DIODE (MIL-S-19500) |
| | | | 100 | | | 1015818-424 | PIN-CONTACT |

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900004 | 1900004 | |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + − ANGLES + −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS-9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Kaplan DATE 25 APR 63
CHECKED 29 APR 63
APPROVAL A. M. Gray 29 APR 63
APPROVAL 29 Apr 63
NASA APPROVAL 5-22-63
MIT APPROVAL 22 May 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

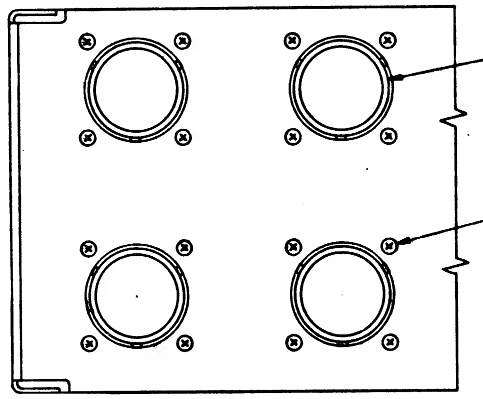
# SELECTOR, TEST ASSEMBLY

CODE IDENT NO.
SIZE D
1900082
SCALE
SHEET

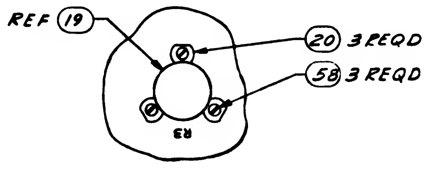
INCHES
PHOTOGRAPHIC SCALE ONLY

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD |
|---|---|---|---|---|---|
| F | | REPLACES REVISION "E" WITH CHANGE PER MXC 187967 TDR 0235 | | 2 JUL 63 | |

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. SOLDER PER MIL-S-6872 (ES-2505-1) USING ITEMS 68 AND 69.
3. PANEL AND CHASSIS TO BE CENTRALIZED WITHIN .010
4. DRAWER SLIDE MOUNTING SCREWS AND FRONT PANEL MOUNTING SCREWS SHALL BE SUBJECTED TO TORQUE OF 37-40 LB/IN AT INSTALLATION.
5. MARK WEIGHT OF ASSEMBLY PER ND- ADJACENT TO NAMEPLATE LOCATION.
6. ITEMS 16, 17, 18, 43, 46, 48 THRU 54, 56, 57, 59, 62, 63 AND 64 ARE VENDOR ITEM - SEE SPEC CONTROL DRAWING



PARTIAL VIEW B-B
ZONE G6 SH 2

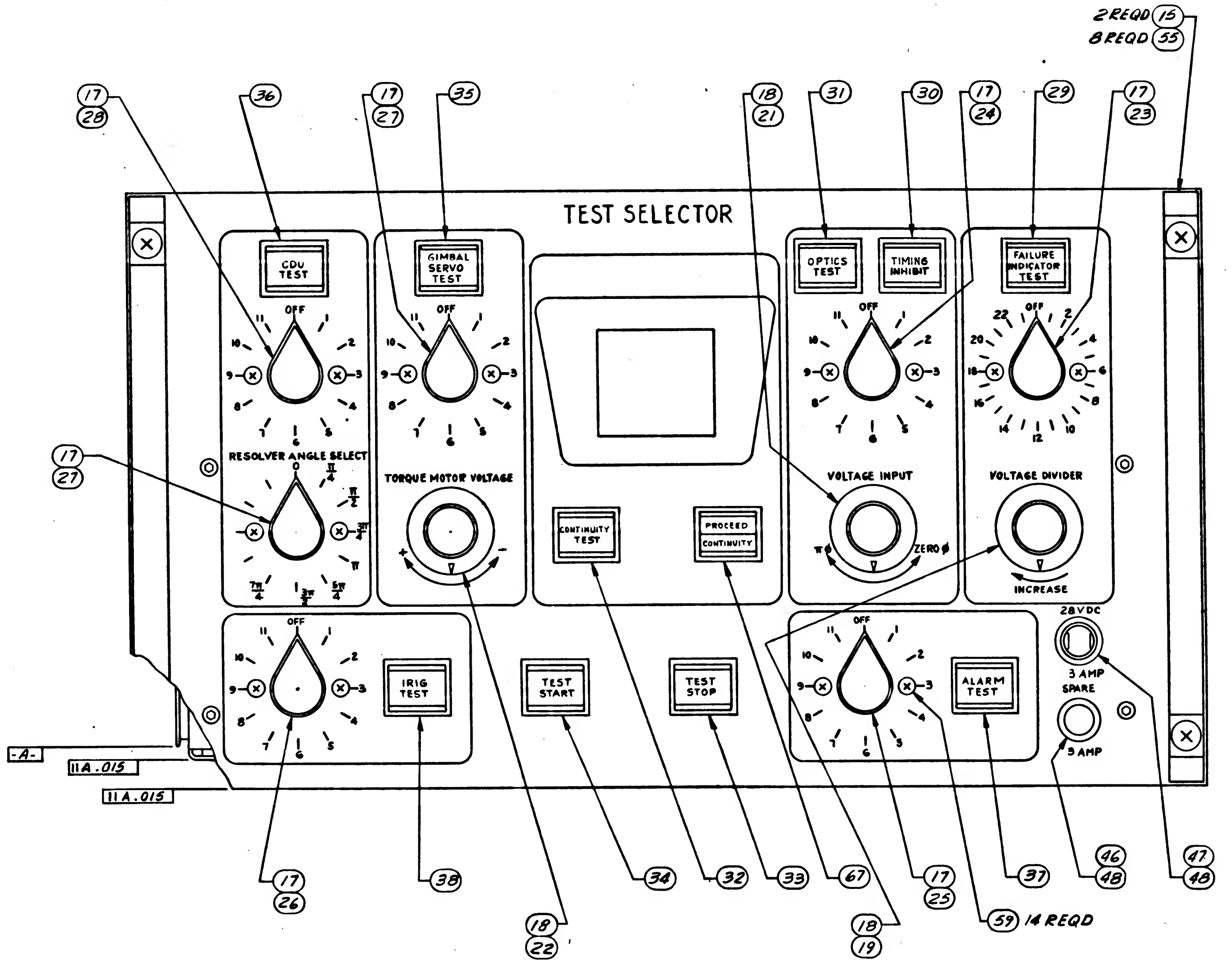


PARTIAL VIEW C-C
ZONE C3 SH 2

**FOR INFORMATION ONLY**

**CLASS B RELEASE TDR No.** 01314 **DATE** 22 May 63

(F) REPLACES REVISION "E" WITH CHANGE PER MXC 87967



VIEW A-A
ZONE B2 SH2

| F | F |
|---|---|
| SHEET 1 | SHEET 2 |

REVISION STATUS OF SHEETS

| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | | | | MIL-F-14256 | FLUX (ES-2798) |
| | | | AR | | 69 | QQ-S-571 | FLUX TYPE AR (ES-2175 TYPE 1 OR 2) |
| | | | AR | | 68 | QQ-S-571 | SOLDER SN60 (ES-2175 ALLOY 1) |
| | | | 1 | | 67 | | LIGHT |
| | | | 2 | | 66 | 1015912-193 | SCREW |
| | | | 1 | | 65 | 1900220 | SPACER, DIGITAL READOUT |
| | | | 2 | | 64 | MS35338-3 | WASHER |
| | | | 2 | | 63 | MS-35216-27 | SCREW |
| | | | 4 | | 62 | AN363C1032 | NUT |
| | | | 4 | | 61 | 1006783-45 | SCREW |
| | | | 8 | | 60 | 1006783-44 | SCREW |
| | | | 14 | | 59 | MS-35200-40 | SCREW |
| | | | 3 | | 58 | 1000093-14 | SCREW |
| | | | 20 | | 57 | AN363C632 | NUT |
| | | | 16 | | 56 | MS-35216-25 | SCREW |
| | | | 8 | | 55 | 1015831-257 | SCREW |
| | | | 4 | | 54 | MS-35216-39 | SCREW |
| | | | 12 | | 53 | MS-35216-26 | SCREW |
| | | | 36 | | 52 | MS-20365-D440 | NUT |
| | | | 8 | | 51 | MS-35216-13 | SCREW |
| | | | 61 | | 50 | MS-35216-24 | SCREW |
| | | | | | 49 | | |
| | | | 2 | | 48 | MS-90078-12-1 | FUSE |
| | | | 1 | | 47 | 1015873-008 | FUSEHOLDER |
| | | | 1 | | 46 | MS-26572-1 | FUSEHOLDER |
| | | | 1 | | 45 | 1015844-001 | DIGITAL READOUT |
| | | | 1 | | 44 | 1015943-001 | BEZEL |
| | | | | | 43 | | |
| | | | 1 | | 42 | 1015833-006 | RELAY |
| | | | 1 | | 41 | 1015833-007 | RELAY |
| | | | 1 | | 40 | | TRANSFORMER |
| | | | 1 | | 39 | | TRANSFORMER |
| | | | 1 | | 38 | | LIGHT |
| | | | 1 | | 37 | | LIGHT |
| | | | 1 | | 36 | | LIGHT |
| | | | 1 | | 35 | | LIGHT |
| | | | 1 | | 34 | | LIGHT |
| | | | 1 | | 33 | | LIGHT |
| | | | 1 | | 32 | | LIGHT |
| | | | 1 | | 31 | | LIGHT |
| | | | 1 | | 30 | | LIGHT |
| | | | 1 | | 29 | | LIGHT |
| | | | 1 | | 28 | | SWITCH, ROTARY |
| | | | 2 | | 27 | | SWITCH, ROTARY |
| | | | 1 | | 26 | | SWITCH, ROTARY |
| | | | 1 | | 25 | | SWITCH, ROTARY |
| | | | 1 | | 24 | | SWITCH, ROTARY |
| | | | 1 | | 23 | | SWITCH, ROTARY |
| | | | 1 | | 22 | 1015958-10 | RESISTOR |
| | | | 1 | | 21 | 1015951-503 | RESISTOR |
| | | | 3 | | 20 | 1016004-008 | CLAMP |
| | | | 1 | | 19 | 1015959 | RESISTOR-VARIABLE |
| | | | 3 | | 18 | MS-91528-2F1B | KNOB, CONTROL |
| | | | 7 | | 17 | MS-91528-2K2B | KNOB, CONTROL |
| | | | | | 16 | | |
| | | | 2 | | 15 | 1900015-061 | HANDLE ASSY |
| | | | 1 | | 14 | 1900187 | WIRING HARNESS "A" |
| | | | 18 | | 13 | 1015802-004 | RELAY-ARMATURE |
| | | | 2 | | 12 | 1015833-009 | RELAY |
| | | | 29 | | 11 | 1015837-001 | RELAY, ARMATURE |
| | | | 2 | | 10 | 1015867-500 | CONNECTOR, RECEPTACLE |
| | | | 1 | | 9 | 1015785-010 | SLIDE ASSY-L.H. |
| | | | 1 | | 8 | 1015785-009 | SLIDE ASSY-R.H. |
| | | | 12 | | 7 | | SPACER |
| | | | 1 | | 6 | 1900254 | COMPONENT BOARD ASSY |
| | | | 1 | | 5 | 1900231-011 | DIODE BOARD ASSY |
| | | | 1 | | 4 | 1900230 | BRACKET, MOUNTING (INSEP, ASSY) |
| | | | 1 | | 3 | 1900253 | PLATE, CHASSIS |
| | | | 1 | | 2 | 1900252 | DRAWER |
| | | | 1 | | 1 | 1900251 | PANEL, FRONT |

QUANTITY REQUIRED

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900004 | 1900004 | |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN Jaschke DATE 25 JUN 63
CHECKED C Pinda 3 JUL 63
APPROVAL L P Kurse 7-3-63
APPROVAL L Gelman 7-3
NASA APPROVAL Jack Basnnd
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

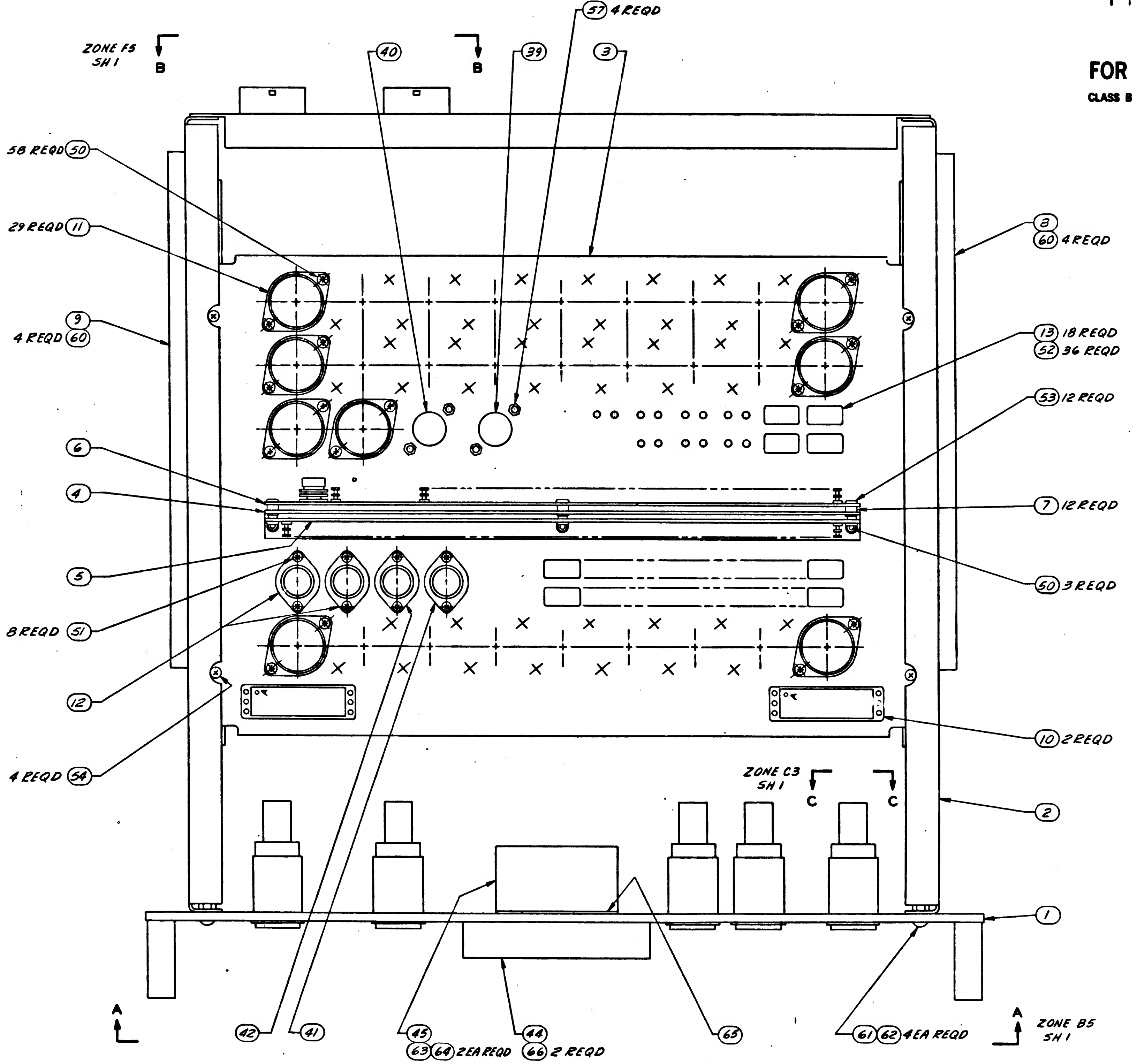
TEST SELECTOR
ASSEMBLY

CODE IDENT NO.
SIZE E
1900082
SCALE FULL
SHEET 1 OF 2

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
| F | | Replaces Revision E with change per MXC 187967<br>TDRR02376<br>This sheet added (Sheet 2) | | 7/3/63 | WK |

**FOR INFORMATION ONLY**

**CLASS B RELEASE TDR No.__________ DATE**



UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ − + − + −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Goethe DATE 25 JUN 63
CHECKED C. Pryde 3 JUL 63
APPROVAL J. Prisco 7-3-63
APPROVAL Gehman 7/28/63
NASA APPROVAL Jack Barnard
MIT APPROVAL Kupfer 31 Jul 63

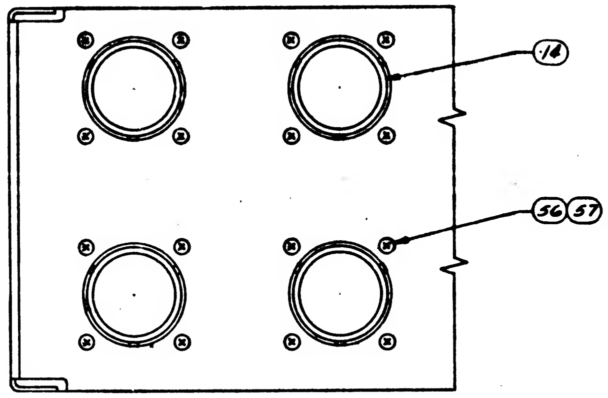
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TEST SELECTOR
ASSEMBLY

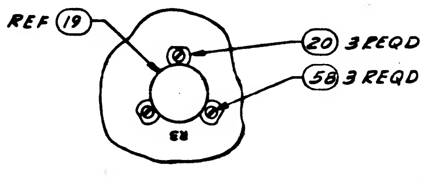
CODE IDENT NO.
SIZE E
1900082
SCALE FULL
SHEET 2 OF 2

INCHES
PHOTOGRAPHIC SCALE ONLY

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. SOLDER PER MIL-S-6872 (ES-2505-1) USING ITEMS 68 AND 69.
3. PANEL AND CHASSIS TO BE CENTRALIZED WITHIN .010
4. DRAWER SLIDE MOUNTING SCREWS AND FRONT PANEL MOUNTING SCREWS SHALL BE SUBJECTED TO TORQUE OF 37-40 LB/IN AT INSTALLATION.
5. MARK WEIGHT OF ASSEMBLY PER ND- ADJACENT TO NAMEPLATE LOCATION.
6. ITEMS 16, 17, 18, 43, 46, 48 THRU 54, 56, 57, 59, 62, 63 AND 64 ARE VENDOR ITEM - SEE SPEC CONTROL DRAWING



PARTIAL VIEW B-B
ZONE G6 SH 2



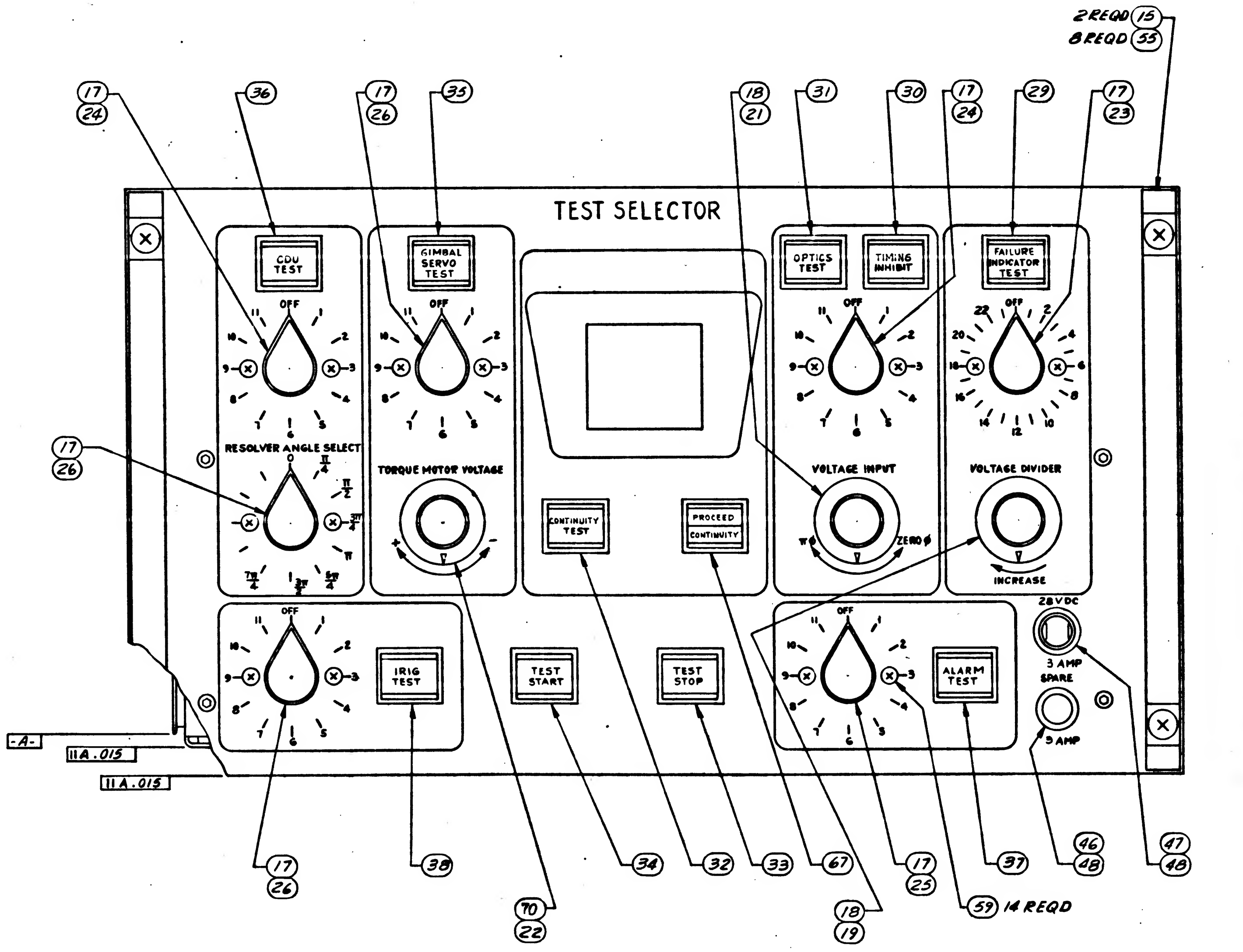
PARTIAL VIEW C-C
ZONE C3 SH 2

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
|---|---|---|---|---|---|
| F |  | REPLACES REVISION "E" WITH CHANGE PER MXC 187967 | TDR 02376 | 12 JUL 63 |  |
| G |  | CHANGE IN ACCORDANCE WITH MXC 188070 REVISION STATUS BLOCK REV. | — | 22 AUG 63 | WSM |
| H |  | CHANGED IN ACCORDANCE WITH MXC 188188. | — | 28 AUG 63 |  |
| J |  | PREVIOUSLY ACCOMPLISHED BY MXC 188188 |  | 28 AUG 63 | J.J.J. |
| K |  | CHANGE IN ACCORDANCE WITH MXC-188863 |  | 28 AUG 63 | J.J.J. |
| L |  | CHANGE IN ACCORDANCE WITH MXC-189023 |  | 28 AUG 63 | J.J.J. |
|  |  | INCORPORATES CHANGES "G" THRU "L" PER TDR 03211 |  |  |  |

## FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 01314 DATE 22 May 63

(F) REPLACES REVISION "E" WITH CHANGE PER MXC 187967



VIEW A-A
ZONE B2 SH 2

| QUANTITY REQUIRED 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|
| 1 |  | 70 | MS91528-2F2B | KNOB, CONTROL |
|  |  |  | MIL-F-14256 | FLUX (ES-2798) |
| AR |  | 69 | QQ-S-571 | FLUX TYPE AR (ES-2175 TYPE 1 OR 2) |
| AR |  | 68 | QQ-S-571 | SOLDER SN60 (ES-2175 ALLOY 1) |
| 1 |  | 67 | 1015869-337 | LIGHT-INDICATOR |
| 2 |  | 66 | 1015912-193 | SCREW |
| 1 |  | 65 | 1900220 | SPACER, DIGITAL READOUT |
| 2 |  | 64 | MS35338-3 | WASHER |
| 2 |  | 63 | MS-35216-27 | SCREW |
| 4 |  | 62 | AN363C1032 | NUT |
| 4 |  | 61 | 1006783-45 | SCREW |
| 8 |  | 60 | 1006783-44 | SCREW |
| 14 |  | 59 | MS-35200-40 | SCREW |
| 3 |  | 58 | 1000093-14 | SCREW |
| 20 |  | 57 | AN363C632 | NUT |
| 16 |  | 56 | MS-35216-25 | SCREW |
| 8 |  | 55 | 1015931-257 | SCREW |
| 4 |  | 54 | MS-35216-39 | SCREW |
| 12 |  | 53 | MS-35216-26 | SCREW |
| 36 |  | 52 | MS-20365-D440 | NUT |
| 8 |  | 51 | MS-35216-13 | SCREW |
| 61 |  | 50 | MS-35216-24 | SCREW |
|  |  | 49 |  |  |
| 2 |  | 48 | MS-90078-12-1 | FUSE |
| 1 |  | 47 | 1015873-008 | FUSEHOLDER |
| 1 |  | 46 | MS-26572-1 | FUSEHOLDER |
| 1 |  | 45 | 1015844-001 | DIGITAL READOUT |
| 1 |  | 44 | 1015943-001 | BEZEL |
|  |  | 43 |  |  |
| 1 |  | 42 | 1015833-006 | RELAY |
| 1 |  | 41 | 1015833-007 | RELAY |
| 1 |  | 40 |  | TRANSFORMER |
| 1 |  | 39 | 1016034 | TRANSFORMER |
| 1 |  | 38 | 1015869-329 | LIGHT-INDICATOR |
| 1 |  | 37 | 1015869-703 | LIGHT-INDICATOR |
| 1 |  | 36 | 1015869-323 | LIGHT-INDICATOR |
| 1 |  | 35 | 1015869-702 | LIGHT-INDICATOR |
| 1 |  | 34 | 1015869-325 | LIGHT-INDICATOR |
| 1 |  | 33 | 1015869-326 | LIGHT-INDICATOR |
| 1 |  | 32 | 1015869-517 | LIGHT-INDICATOR |
| 1 |  | 31 | 1015869-327 | LIGHT-INDICATOR |
| 1 |  | 30 | 1015369-518 | LIGHT-INDICATOR |
| 1 |  | 29 | 1015869-328 | LIGHT-INDICATOR |
|  |  | 28 |  |  |
|  |  | 27 |  |  |
| 2 |  | 26 | 1015825-018 | SWITCH, ROTARY |
| 1 |  | 25 | 1015825-017 | SWITCH, ROTARY |
| 2 |  | 24 | 1015825-019 | SWITCH, ROTARY |
| 1 |  | 23 | 1015825-020 | SWITCH, ROTARY |
| 1 |  | 22 | 1016003-10 | RESISTOR, VARIABLE |
| 1 |  | 21 | 1015951-504 | RESISTOR |
| 3 |  | 20 | 1016004-008 | CLAMP |
| 1 |  | 19 | 1015959 | RESISTOR-VARIABLE |
| 2 |  | 18 | MS-91528-2F1B | KNOB, CONTROL |
| 7 |  | 17 | MS-91528-2K2B | KNOB, CONTROL |
|  |  | 16 |  |  |
| 2 |  | 15 | 1900015-061 | HANDLE ASSY |
| 1 |  | 14 | 1900187 | WIRING HARNESS "A" |
| 18 |  | 13 | 1015802-004 | RELAY-ARMATURE |
| 2 |  | 12 | 1015833-009 | RELAY |
| 29 |  | 11 | 1015837-001 | RELAY, ARMATURE |
| 2 |  | 10 | 1015867-500 | CONNECTOR, RECEPTACLE |
| 1 |  | 9 | 1015785-010 | SLIDE ASSY-L.H. |
| 1 |  | 8 | 1015785-009 | SLIDE ASSY-R.H. |
| 12 |  | 7 |  | SPACER |
| 1 |  | 6 | 1900254 | COMPONENT BOARD ASSY |
| 1 |  | 5 | 1900231-011 | DIODE BOARD ASSY |
| 1 |  | 4 | 1900230 | BRACKET, MOUNTING (INSEP) ASSY |
| 1 |  | 3 | 1900253 | PLATE, CHASSIS |
| 1 |  | 2 | 1900252 | DRAWER |
| 1 |  | 1 | 1900251 | PANEL, FRONT |

LIST OF PARTS AND MATERIALS

| SHEET 1 | SHEET 2 |
|---|---|
| L | F |
| K | F |
| J | F |
| H | F |
| G | F |

REVISION STATUS OF SHEETS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900004 | 1900004 |  |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Baschke DATE 25 JUN 63
CHECKED C. Pirola 3 JUL 63
APPROVAL L.P. Kurns 7-3-63
APPROVAL
NASA APPROVAL Jack Barnard
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

TEST SELECTOR ASSEMBLY

CODE IDENT NO.
SIZE E
1900082
SCALE FULL
SHEET 1 OF 2

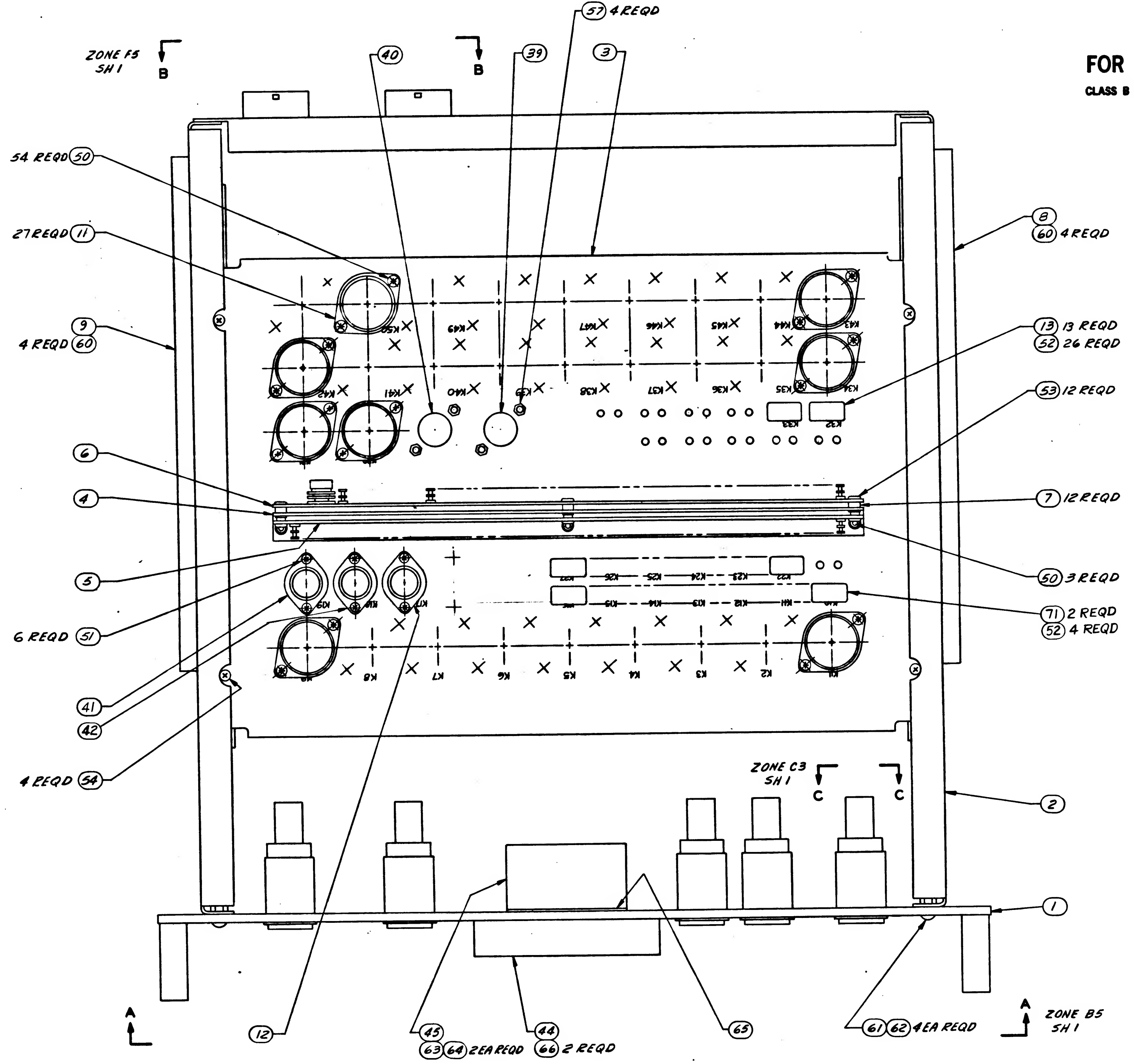
1900082

INCHES
PHOTOGRAPHIC SCALE ONLY

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD |
| F | | Replaces Revision E with change per MXC 18-967 TDRR 02376 This sheet added (sheet 2) | | 7/31/63 | WK |
| N | | CHANGE IN ACCORDANCE WITH MXC 189513 PER TDRR [illegible] | | [illegible] | [illegible] |

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 01314 DATE [illegible] May 63

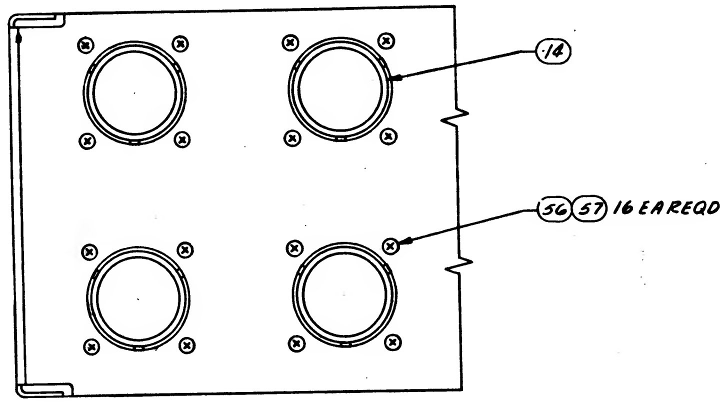


| | | |
|---|---|---|
| UNLESS OTHERWISE SPECIFIED<br>DIMENSIONS ARE IN INCHES<br>TOLERANCES ON<br>FRACTIONS + − − −  DECIMALS + − − −  ANGLES + − − − | AC SPARK PLUG DIVISION, GMC<br>MILWAUKEE, WISCONSIN | MANNED<br>SPACECRAFT CENTER<br>HOUSTON, TEXAS |
| | ACSP PN | |
| | DRAWN [illegible] DATE 25 JUN 63<br>CHECKED C. Pizzola 3 JUL 63<br>APPROVAL [illegible] 7-3-63<br>APPROVAL [illegible] 7/28/63 | TEST SELECTOR<br>ASSEMBLY |
| DO NOT SCALE THIS DRAWING | | |
| MATERIAL | NASA APPROVAL [illegible] | CODE IDENT NO. SIZE E 1900082 |
| CONTRACT NAS 9-497 | MIT APPROVAL [illegible] 31 Jul 63 | SCALE FULL SHEET 2 OF 2 |

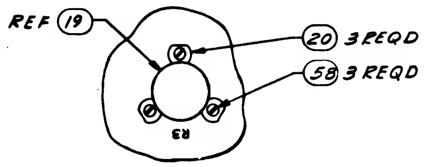
1900082

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. SOLDER PER MIL-S-6872 (ES-2505-1) USING ITEMS 68 AND 69.
3. PANEL AND CHASSIS TO BE CENTRALIZED WITHIN .010
4. DRAWER SLIDE MOUNTING SCREWS AND FRONT PANEL MOUNTING SCREWS SHALL BE SUBJECTED TO TORQUE OF 37-40 LB/IN AT INSTALLATION.
5. MARK WEIGHT OF ASSEMBLY PER ND- ADJACENT TO NAMEPLATE LOCATION.
6. ITEMS 16, 17, 18, 43, 46, 48 THRU 54, 56, 57, 59, 62, 63 AND 64 ARE VENDOR ITEM - SEE SPEC CONTROL DRAWING
7. SERIALIZE PER ND 1002023.



PARTIAL VIEW B-B
ZONE G6 SH 2



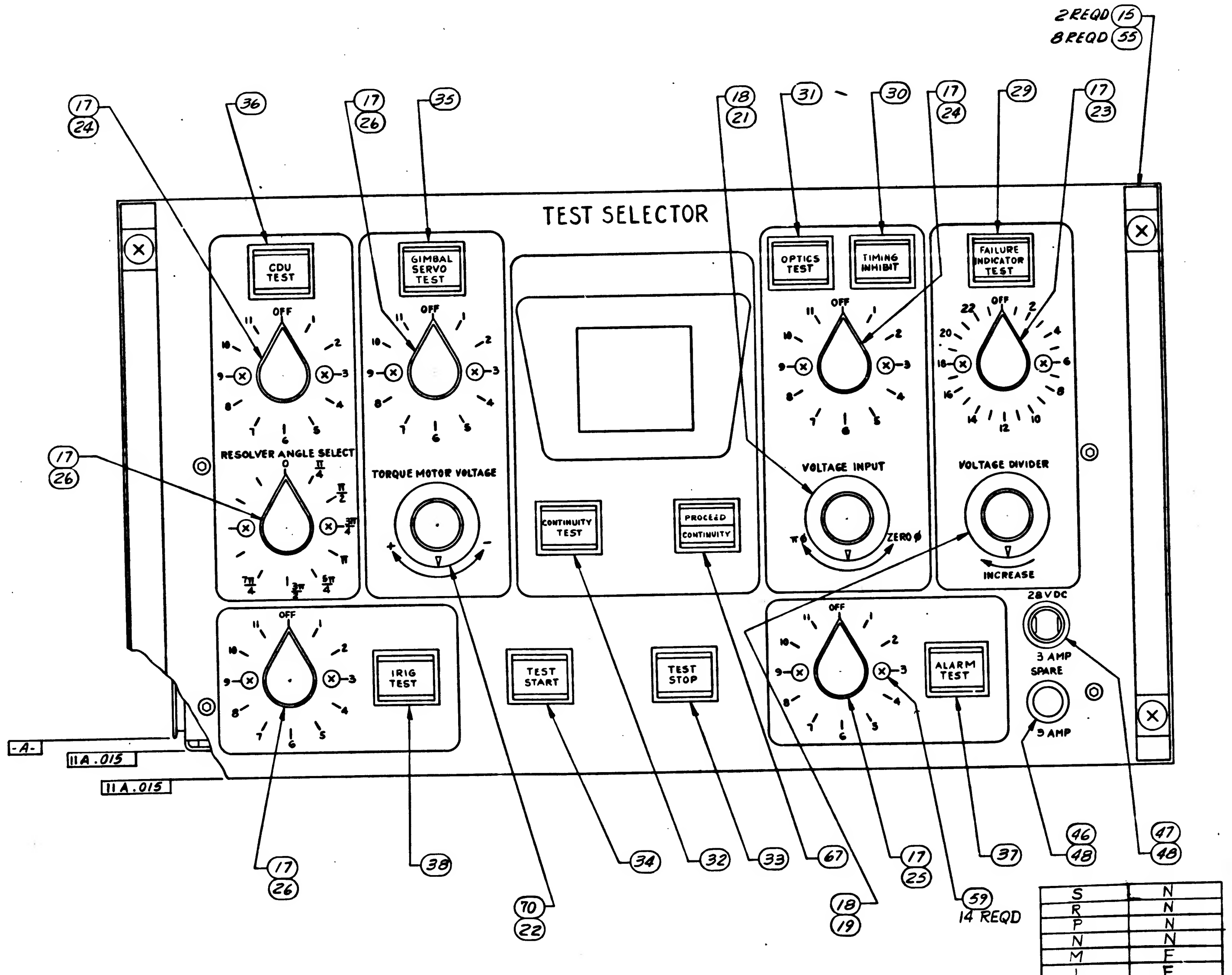
PARTIAL VIEW C-C
ZONE C3 SH 2

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| F | | REPLACES REVISION "E" WITH CHANGE PER MXC 187967 TDR 0235 | | [illegible] | [illegible] |
| G | | CHANGE IN ACCORDANCE WITH MXC 188070 REVISION STATUS BLOCK REV | — | 23 [illegible] 63 | [illegible] |
| H | | CHANGED IN ACCORDANCE WITH MXC 188188 | — | [illegible] 63 | [illegible] |
| J | | PREVIOUSLY ACCOMPLISHED BY MXC 188188 | | 28 AUG 63 | J.J.J. |
| K | | CHANGE IN ACCORDANCE WITH MXC-188863 | | 28 AUG 63 | J.J.J. |
| L | | CHANGE IN ACCORDANCE WITH MXC-189025 | | 28 AUG 63 | J.J.J. |
| | | INCORPORATES CHANGES G THRU L PER TDR [illegible] | | [illegible] | |
| M | | CHANGE IN ACCORDANCE WITH MXC 189192 | | 30 SEP 63 | |
| N | | CHANGE IN ACCORDANCE WITH MXC 18953 | | [illegible]-63 | |
| P | | CHANGE IN ACCORDANCE WITH MXC-189522 | | 2-[illegible]-63 | |
| R | | CHANGE IN ACCORDANCE WITH MXC 190057 | | [illegible]-63 | |
| S | | CHANGE IN ACCORDANCE WITH MXC 190[illegible]3 REVISED PER TDR 04[illegible] | | [illegible] | |

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01314 DATE 22 May 63

(F) REPLACES REVISION "E" WITH CHANGE PER MXC 87967



VIEW A-A
ZONE B2 SH2

| | SHEET 1 | SHEET 2 |
|---|---|---|
| | S | N |
| | R | N |
| | P | N |
| | N | N |
| | M | F |
| | L | F |
| | K | F |
| | J | F |
| | H | F |
| | G | F |

REVISION STATUS OF SHEETS

| QUANTITY REQUIRED 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|
| — | | 72 | ATP 1900082 | ASSEMBLY TEST PROCEDURE |
| 2 | | 71 | 1015832-318 | RELAY, SENSITIVE |
| 1 | | 70 | MS91528-2F2B | KNOB, CONTROL |
| | | | MIL-F-14256 | FLUX (ES-2798) |
| AR | | 69 | QQ-S-571 | FLUX TYPE AR (ES-2175 TYPE 1 OR 2) |
| AR | | 68 | QQ-S-571 | SOLDER SN60 (ES-2175 ALLOY 1) |
| 1 | | 67 | 1015869-337 | LIGHT-INDICATOR |
| 2 | | 66 | 1015912-193 | SCREW |
| 1 | | 65 | 1900220 | SPACER, DIGITAL READOUT |
| 2 | | 64 | MS35338-3 | WASHER |
| 2 | | 63 | MS-35216-27 | SCREW |
| 4 | | 62 | AN363C1032 | NUT |
| 4 | | 61 | 1006783-45 | SCREW |
| 8 | | 60 | 1006783-44 | SCREW |
| 14 | | 59 | MS-35200-40 | SCREW |
| 3 | | 58 | 1000093-14 | SCREW |
| 20 | | 57 | AN363C632 | NUT |
| 16 | | 56 | MS-35216-25 | SCREW |
| 8 | | 55 | 1015831-257 | SCREW |
| 4 | | 54 | MS-35216-39 | SCREW |
| 12 | | 53 | MS-35216-26 | SCREW |
| 30 | | 52 | MS-20365-D440 | NUT |
| 6 | | 51 | MS-35216-13 | SCREW |
| 57 | | 50 | MS-35216-24 | SCREW |
| | | 49 | | |
| 2 | | 48 | MS-90078-12-1 | FUSE |
| 1 | | 47 | 1015873-008 | FUSEHOLDER |
| 1 | | 46 | MS-26572-1 | FUSEHOLDER |
| 1 | | 45 | 1015844-001 | DIGITAL READOUT |
| 1 | | 44 | 1015943-001 | BEZEL |
| | | 43 | | |
| 1 | | 42 | 1015833-008 | RELAY |
| 1 | | 41 | 1015833-007 | RELAY |
| 1 | | 40 | 1016082 | TRANSFORMER |
| 1 | | 39 | 1016034 | TRANSFORMER |
| 1 | | 38 | 1015869-329 | LIGHT-INDICATOR |
| 1 | | 37 | 1015869-703 | LIGHT-INDICATOR |
| 1 | | 36 | 1015869-323 | LIGHT-INDICATOR |
| 1 | | 35 | 1015869-702 | LIGHT-INDICATOR |
| 1 | | 34 | 1015869-325 | LIGHT-INDICATOR |
| 1 | | 33 | 1015869-326 | LIGHT-INDICATOR |
| 1 | | 32 | 1015869-517 | LIGHT-INDICATOR |
| 1 | | 31 | 1015869-327 | LIGHT-INDICATOR |
| 1 | | 30 | 1015869-518 | LIGHT-INDICATOR |
| 1 | | 29 | 1015869-328 | LIGHT-INDICATOR |
| | | 28 | | |
| | | 27 | | |
| 3 | | 26 | 1015825-018 | SWITCH, ROTARY |
| 1 | | 25 | 1015825-017 | SWITCH, ROTARY |
| 2 | | 24 | 1015825-019 | SWITCH, ROTARY |
| 1 | | 23 | 1015825-020 | SWITCH, ROTARY |
| 1 | | 22 | 1016003-10 | RESISTOR, VARIABLE |
| 1 | | 21 | 1015951-504 | RESISTOR |
| 3 | | 20 | 1016004-008 | CLAMP |
| 1 | | 19 | 1015959 | RESISTOR-VARIABLE |
| 2 | | 18 | MS-91528-2F1B | KNOB, CONTROL |
| 7 | | 17 | MS-91528-2K2B | KNOB, CONTROL |
| | | 16 | | |
| 2 | | 15 | 1900015-061 | HANDLE ASSY |
| 1 | | 14 | 1900187 | WIRING HARNESS "A" |
| 13 | | 13 | 1015802-004 | RELAY-ARMATURE |
| 1 | | 12 | 1015833-009 | RELAY |
| 27 | | 11 | 1015837-001 | RELAY, ARMATURE |
| 2 | | 10 | | |
| 1 | | 9 | 1015785-010 | SLIDE ASSY-L.H. |
| 1 | | 8 | 1015785-009 | SLIDE ASSY-R.H. |
| 12 | | 7 | | SPACER |
| 1 | | 6 | 1900254 | COMPONENT BOARD ASSY |
| 1 | | 5 | 1900231-011 | DIODE BOARD ASSY |
| 1 | | 4 | 1900230 | BRACKET, MOUNTING (INSEP) ASSY |
| 1 | | 3 | 1900253 | PLATE, CHASSIS |
| 1 | | 2 | 1900252 | DRAWER |
| 1 | | 1 | 1900251 | PANEL, FRONT |

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900004 | 1900004 | |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Jaschke DATE 25 JUN 63
CHECKED C Pioda 3 JUL 63
APPROVAL L P Kuna 7-3-63
APPROVAL
NASA APPROVAL Jack Barnard
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TEST SELECTOR
ASSEMBLY

CODE IDENT NO
SIZE E
1900082
SCALE FULL
SHEET 1 OF 2

INCHES
PHOTOGRAPHIC SCALE ONLY

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. SOLDER PER MIL-S-6872 (ES-2505-1) USING ITEMS 68 AND 69.
3. PANEL AND CHASSIS TO BE CENTRALIZED WITHIN .010
4. DRAWER SLIDE MOUNTING SCREWS AND FRONT PANEL MOUNTING SCREWS SHALL BE SUBJECTED TO TORQUE OF 37-40 LB/IN AT INSTALLATION.
5. MARK WEIGHT OF ASSEMBLY PER ND- ADJACENT TO NAMEPLATE LOCATION.
6. ITEMS 16, 17, 18, 43, 46, 48 THRU 54, 56, 57, 59, 62, 63 AND 64 ARE VENDOR ITEM - SEE SPEC CONTROL DRAWING
7. SERIALIZE PER ND 1002023.

REVISIONS

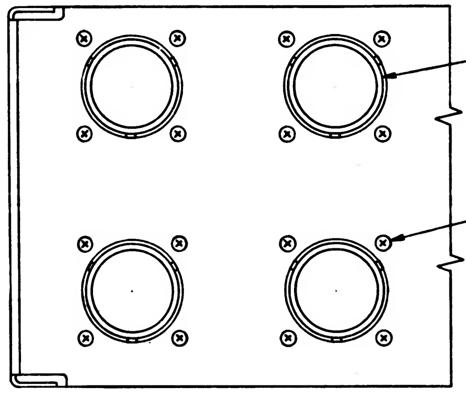
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD |
|---|---|---|---|---|---|
| T | | CHANGE IN ACCORDANCE WITH MXC 90124 PER TDRR 08829 | | 9 JAN 64 | L.G.H. RJJ |
| U | | CHANGE IN ACCORDANCE WITH MXC 190293 PER TDRR 08829 | | 10 JAN 64 | L.G.H. RJJ |
| V | | REPLACED WITH CHANGE BY REV. W PER MXC 190585 REVISED PER TDR 08829 | | 13 JAN 64 | L.G.H. RJJ |

REVISIONS

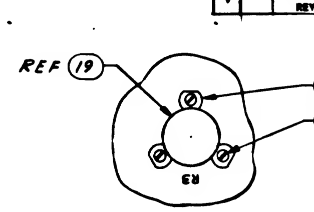
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD |
|---|---|---|---|---|---|
| F | | REPLACES REVISION "E" WITH CHANGE PER MXC 187967 | DR02376 | 12 JUL 63 | JLC |
| G | | CHANGE IN ACCORDANCE WITH MXC 188070 REVISION STATUS BLOCK REV. | — | 22 AUG 63 | WSM |
| H | | CHANGED IN ACCORDANCE WITH MXC 188188 | — | 28 AUG 63 | J.E.G. |
| J | | PREVIOUSLY ACCOMPLISHED BY MXC 188188 | | 28 AUG 63 | J.J.J. J.E.G. |
| K | | CHANGE IN ACCORDANCE WITH MXC-188863 | | 28 AUG 63 | J.J.J. J.E.G. |
| L | | CHANGE IN ACCORDANCE WITH MXC-189025 | | 28 AUG 63 | J.J.J. J.E.G. |
| | | INCORPORATES CHANGES "G" THRU "L" PER TDR 0321 | | [illegible] | [illegible] |
| M | | CHANGE IN ACCORDANCE WITH MXC 189192 | | 30 SEP 63 | [illegible] |
| N | | CHANGE IN ACCORDANCE WITH MXC 189513 | | 1-OCT-63 | [illegible] |
| P | | CHANGE IN ACCORDANCE WITH MXC-189522 | | 2-OCT-63 | [illegible] |
| R | | CHANGE IN ACCORDANCE WITH MXC 190057 | | 2-OCT-63 | [illegible] |
| S | | CHANGE IN ACCORDANCE WITH MXC 190123 REVISED PER TDR 04084 | | 2-OCT-63 | [illegible] |

**FOR INFORMATION ONLY**

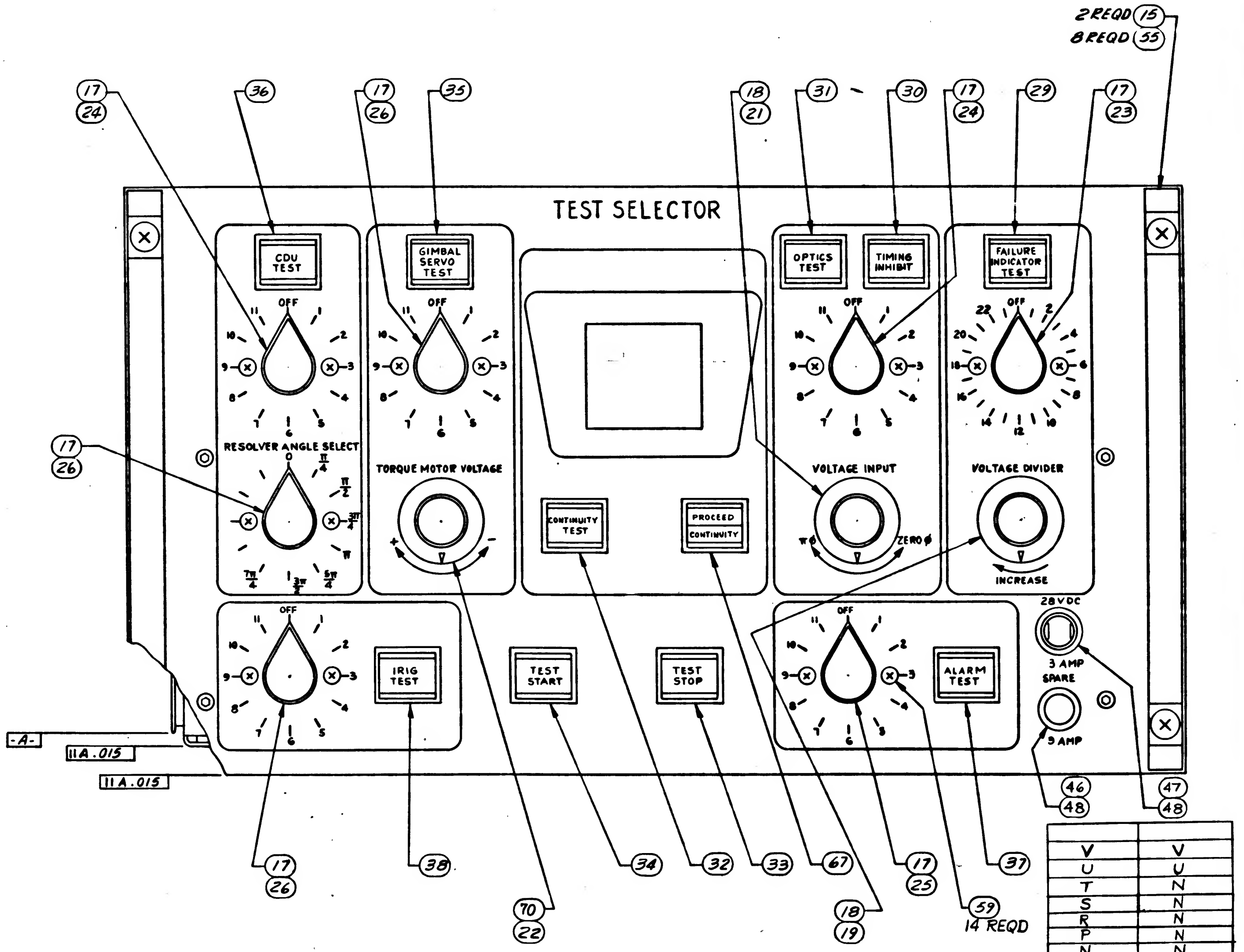
CLASS B RELEASE TDR No. 01314 DATE 22 May 63



PARTIAL VIEW B-B
ZONE G6 SH2



PARTIAL VIEW C-C
ZONE C3 SH 2



VIEW A-A
ZONE B2 SH2

| | |
|---|---|
| V | V |
| U | U |
| T | N |
| S | N |
| R | N |
| P | N |
| N | N |
| M | F |
| L | F |
| K | F |
| J | F |
| H | F |
| G | F |
| SHEET 1 | SHEET 2 |

REVISION STATUS OF SHEETS

Ⓥ REPLACED WITH CHANGE BY REV W
Ⓕ REPLACES REV E WITH CHANGE

| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | 1 | | 74 | 1900691 | WIRE LIST B-B |
| | | | 1 | | 73 | 1900689 | WIRE LIST A-A |
| | | | — | | 72 | ATP 1900082 | ASSEMBLY TEST PROCEDURE |
| | | | 2 | | 71 | 1015832-318 | RELAY, SENSITIVE |
| | | | 1 | | 70 | MS91528-2F2B | KNOB, CONTROL |
| | | | AR | | 69 | MIL-F-14256<br>QQ-S-571 | FLUX (ES-2798)<br>FLUX TYPE AR (ES-2175 TYPE 1 OR 2) |
| | | | AR | | 68 | QQ-S-571 | SOLDER SN60 (ES-2175 ALLOY 1) |
| | | | 1 | | 67 | 1015869-337 | LIGHT-INDICATOR |
| | | | 2 | | 66 | 1015912-193 | SCREW |
| | | | 1 | | 65 | 1900220 | SPACER, DIGITAL READOUT |
| | | | 2 | | 64 | MS35338-3 | WASHER |
| | | | 2 | | 63 | MS-35216-27 | SCREW |
| | | | 4 | | 62 | AN363C1032 | NUT |
| | | | 4 | | 61 | 1006783-45 | SCREW |
| | | | 8 | | 60 | 1006783-44 | SCREW |
| | | | 14 | | 59 | MS-35200-40 | SCREW |
| | | | 3 | | 58 | 1000093-14 | SCREW |
| | | | 20 | | 57 | AN363C632 | NUT |
| | | | 16 | | 56 | MS-35216-25 | SCREW |
| | | | 8 | | 55 | 1015831-257 | SCREW |
| | | | 4 | | 54 | MS-35216-39 | SCREW |
| | | | 12 | | 53 | MS-35216-26 | SCREW |
| | | | 24 | | 52 | MS-20365-D440 | NUT |
| | | | 6 | | 51 | MS-35216-13 | SCREW |
| | | | 55 | | 50 | MS-35216-24 | SCREW |
| | | | | | 49 | | |
| | | | 2 | | 48 | MS-90078-12-1 | FUSE |
| | | | 1 | | 47 | 1015873-008 | FUSEHOLDER |
| | | | 1 | | 46 | MS-26572-1 | FUSEHOLDER |
| | | | 1 | | 45 | 1015844-001 | DIGITAL READOUT |
| | | | 1 | | 44 | 1015943-001 | BEZEL |
| | | | | | 43 | | |
| | | | 1 | | 42 | 1015833-008 | RELAY |
| | | | 1 | | 41 | 1015833-007 | RELAY |
| | | | 1 | | 40 | 1016082 | TRANSFORMER |
| | | | 1 | | 39 | 1016034 | TRANSFORMER |
| | | | 1 | | 38 | 1015869-329 | LIGHT-INDICATOR |
| | | | 1 | | 37 | 1015869-703 | LIGHT-INDICATOR |
| | | | 1 | | 36 | 1015869-323 | LIGHT-INDICATOR |
| | | | 1 | | 35 | 1015869-702 | LIGHT-INDICATOR |
| | | | 1 | | 34 | 1015869-325 | LIGHT-INDICATOR |
| | | | 1 | | 33 | 1015869-326 | LIGHT-INDICATOR |
| | | | 1 | | 32 | 1015869-517 | LIGHT-INDICATOR |
| | | | 1 | | 31 | 1015869-327 | LIGHT-INDICATOR |
| | | | 1 | | 30 | 1015869-518 | LIGHT-INDICATOR |
| | | | 1 | | 29 | 1015869-328 | LIGHT-INDICATOR |
| | | | | | 28 | | |
| | | | | | 27 | | |
| | | | 3 | | 26 | 1015825-018 | SWITCH, ROTARY |
| | | | 1 | | 25 | 1015825-017 | SWITCH, ROTARY |
| | | | 2 | | 24 | 1015825-019 | SWITCH, ROTARY |
| | | | 1 | | 23 | 1015825-020 | SWITCH, ROTARY |
| | | | 1 | | 22 | 1016003-10 | RESISTOR, VARIABLE |
| | | | 1 | | 21 | 1015951-504 | RESISTOR |
| | | | 3 | | 20 | 1016004-008 | CLAMP |
| | | | 1 | | 19 | 1015959 | RESISTOR-VARIABLE |
| | | | 2 | | 18 | MS-91528-2F1B | KNOB, CONTROL |
| | | | 7 | | 17 | MS-91528-2K2B | KNOB, CONTROL |
| | | | | | 16 | | |
| | | | 2 | | 15 | 1900015-061 | HANDLE ASSY |
| | | | 1 | | 14 | 1900187 | WIRING HARNESS "A" |
| | | | 10 | | 13 | 1015802-004 | RELAY-ARMATURE |
| | | | 1 | | 12 | 1015833-009 | RELAY |
| | | | 26 | | 11 | 1015837-001 | RELAY, ARMATURE |
| | | | 2 | | 10 | | |
| | | | 1 | | 9 | 1015785-010 | SLIDE ASSY-L.H. |
| | | | 1 | | 8 | 1015785-009 | SLIDE ASSY-R.H. |
| | | | 12 | | 7 | | SPACER |
| | | | 1 | | 6 | 1900254 | COMPONENT BOARD ASSY |
| | | | 1 | | 5 | 1900231-011 | DIODE BOARD ASSY |
| | | | 1 | | 4 | 1900230 | BRACKET, MOUNTING (INSEP) ASSY |
| | | | 1 | | 3 | 1900253 | PLATE, CHASSIS |
| | | | 1 | | 2 | 1900252 | DRAWER |
| | | | 1 | | 1 | 1900251 | PANEL, FRONT |

QUANTITY REQUIRED

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900004 | 1900004 | |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN [illegible] DATE 25 JUN 63
CHECKED C. Pioda 3 JUL 63
APPROVAL L.P. Kurse 7-3-63
APPROVAL [illegible]
NASA APPROVAL Jack Bosanc
MIT APPROVAL [illegible]

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

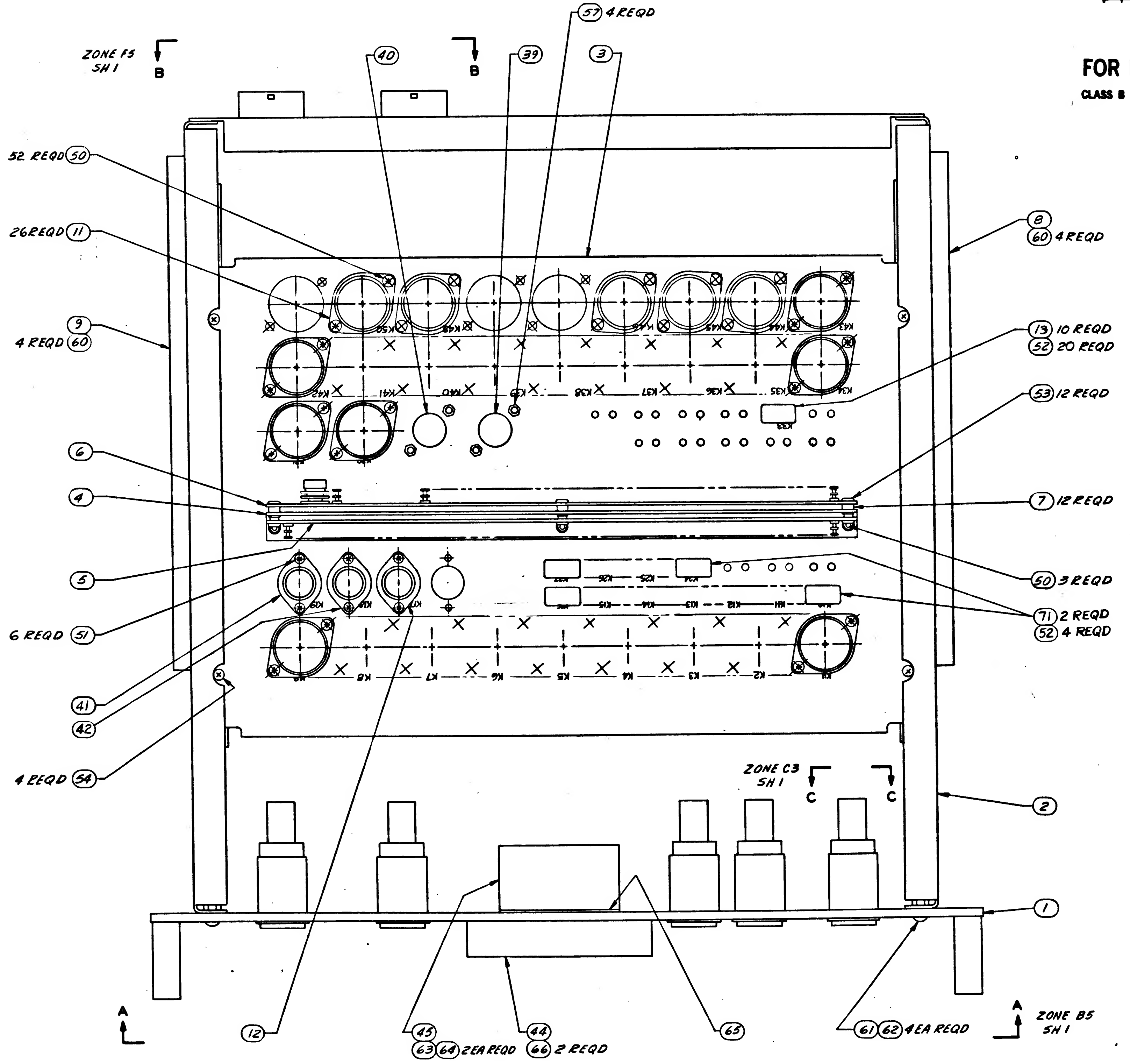
TEST SELECTOR ASSEMBLY

CODE IDENT NO.
SIZE E
1900082
SCALE FULL
SHEET 1 OF 2

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| F | | Replaces Revision E with change per MXC 187967 TDRR 02376 This sheet added (sheet 2) | | 7/31/63 | WH |
| N | | CHANGE IN ACCORDANCE WITH MXC 189513 PER TDRR 0[illegible] | | 2-OCT-63<br>23 OCT 63 | [illegible] |
| U | | CHANGE IN ACCORDANCE WITH MXC 190293 PER TDRR 08829 | | 10 JAN 64 | L.G.H. RJJ |
| V | | REPLACED WITH CHANGE BY REV. W PER MXC 190585 REVISED PER TDR 08829 | | 13 JAN 64 | L.G.H. RJJ |

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01314 2[illegible] May 63 DATE



Ⓥ REPLACED WITH CHANGE BY REV W

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN [illegible] DATE 25 JUN 63
CHECKED C. Pigde 3 JUL 63
APPROVAL [illegible] 7-3-63
APPROVAL [illegible] 7/22/63
NASA APPROVAL Jack Bernard
MIT APPROVAL [illegible] 31 Jul 63

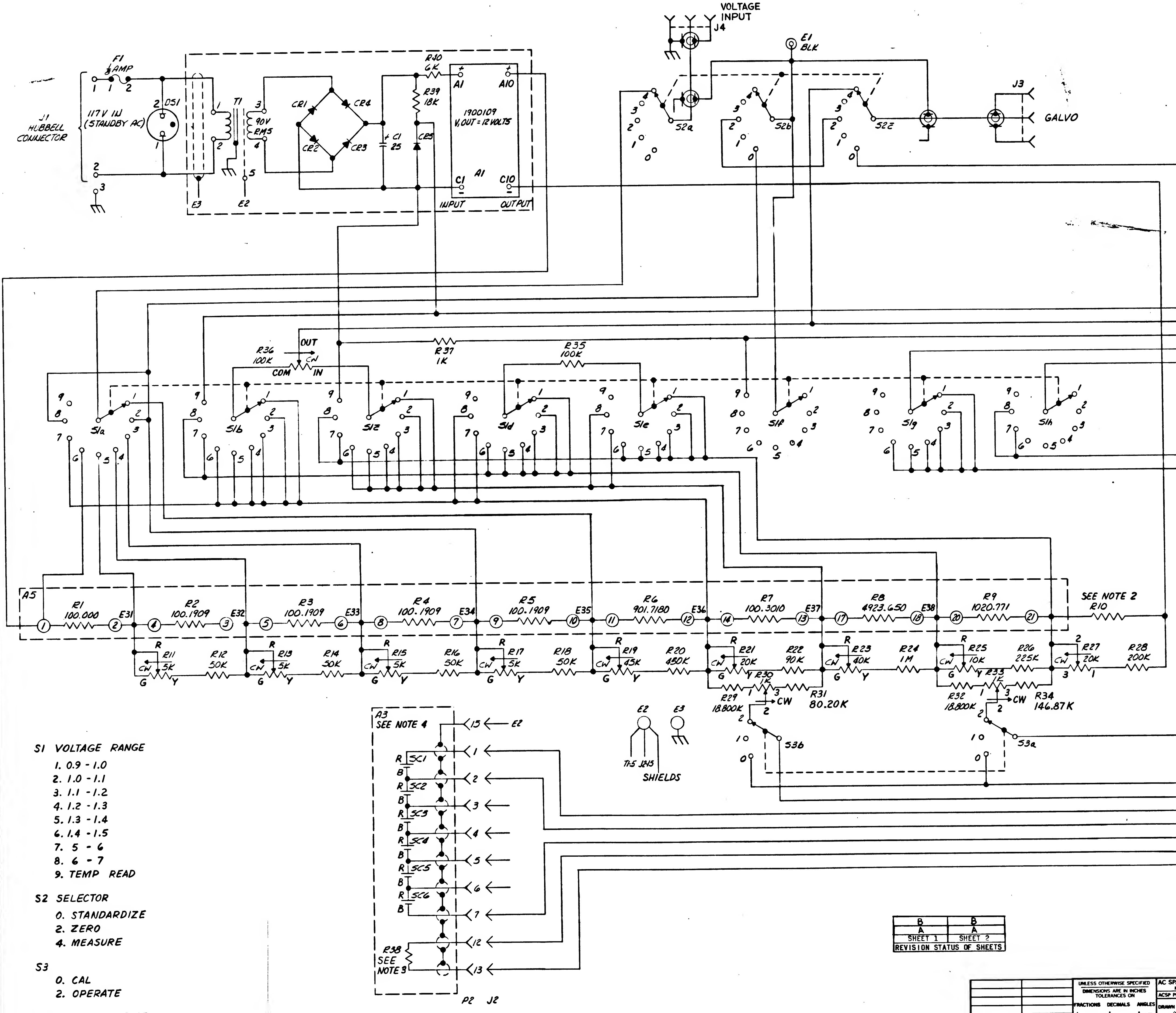
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

TEST SELECTOR
ASSEMBLY

CODE IDENT NO. SIZE E 1900082
SCALE FULL SHEET 2 OF 2

1900082 V

| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
|---|---|---|---|---|---|
| REVISIONS | | | | | |
| A | | CHANGE IN ACCORDANCE WITH CM-192832. ADDED REVISION STATUS BLOCK. | | 10 DEC 63 | RJM |
| B | | REVISION STATUS CHANGED PER CM 194688 TORK 10668 | | 6 FEB 64 | RJF |



S1 VOLTAGE RANGE

1. 0.9 - 1.0
2. 1.0 - 1.1
3. 1.1 - 1.2
4. 1.2 - 1.3
5. 1.3 - 1.4
6. 1.4 - 1.5
7. 5 - 6
8. 6 - 7
9. TEMP READ

S2 SELECTOR

0. STANDARDIZE
2. ZERO
4. MEASURE

S3

0. CAL
2. OPERATE

R27 STANDARDIZE
R36 VOLTAGE
R33 6 V SC. ADJ.
R30 1 V SC. ADJ.

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01389 DATE 5-29-63

| B | B |
|---|---|
| A | A |
| SHEET 1 | SHEET 2 |
| REVISION STATUS OF SHEETS | |

| NEXT ASSY | USED ON |
|---|---|
| | 1900053-011 |
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN A. J. Fluege DATE 23 APR 63
CHECKED W. Snell 15 MAY 63
APPROVAL R. D. Kelly 15 MAY 63
APPROVAL 15 MAY 63
NASA APPROVAL J. P. Heluneg 5-28-63
MIT APPROVAL

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM - CURRENT SOURCE MONITOR

CODE IDENT NO. SIZE E 1900083
SCALE — SHEET 1 OF 2

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD |
|---|---|---|---|---|---|
| A | | CHANGE IN ACCORDANCE WITH CM-192832. | | 11 DEC 63 | RJM |
| B | | CHANGE IN ACCORDANCE WITH CM 194688 TDRR 10668 | | 6 FEB 64 | RJF |

1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

2. R10, 0.01 % TOLERANCE SELECTED FOR A PARTICULAR VOLTAGE REFERENCE TO GIVE 7.4 VOLTS ACROSS THE SRS RATIO SET, WHEN R27 ADJUSTED AT CENTER OF ITS RANGE T.C. < ±2.5 ppm/°C

3. 1K @25°C T.C. 5000 ppm/°C ±10%.

4. CAUTION: STANDARD CELL

DRAWINGS FOR REFERENCE
1900053 -ASSEMBLY DRAWING
-WIRING DIAGRAM

| REF DESIG | PART NUMBER | DESCRIPTION | SCHEMATIC DIAGRAM OR VALUE, TOL & RATING |
|---|---|---|---|
| SC1 | 1015801-001 | STANDARD CELL ▷4 | |
| SC2 | 1015801-001 | STANDARD CELL ▷4 | |
| SC3 | 1015801-001 | STANDARD CELL ▷4 | |
| SC4 | 1015801-001 | STANDARD CELL ▷4 | |
| SC5 | 1015801-001 | STANDARD CELL ▷4 | |
| SC6 | 1015801-001 | STANDARD CELL ▷4 | |
| | | | |
| | | | |
| T1 | 1015806 | TRANSFORMER | |
| | | | |
| | | | |
| XDS1 | 1896963-001 | LIGHT INDICATOR, HOUSING | |
| | | | |
| | | | |
| XF1 | MS26572-001 | FUSE HOLDER | |

| REF DESIG | PART NUMBER | DESCRIPTION | SCHEMATIC DIAGRAM OR VALUE, TOL & RATING |
|---|---|---|---|
| A1 | 1900109 | VOLTAGE REFERENCE | 1900110 |
| | | | |
| A3 | 1900114 | STD CELL ASSY | ~~1900080~~ |
| A5 | 1015807 | RATIO SET | |
| | | | |
| | | | |
| C1 | CE41C250K | CAPACITOR | 25 uf |
| | | | |
| | | | |
| CR1 | 1896966-004 | DIODE | 1N645 |
| CR2 | 1896966-004 | DIODE | 1N645 |
| CR3 | 1896966-004 | DIODE | 1N645 |
| CR4 | 1896966-004 | DIODE | 1N645 |
| CR5 | 1015940 | DIODE | 1N763 |
| | | | |
| | | | |
| DS1 | MS25252-NE2D | LAMP | |
| | | | |
| | | | |
| E1 | 1896961-004 | BINDING POST | |
| E2 | 1896961-004 | BINDING POST | |
| E3 | 1016112-001 | BINDING POST | |
| ~~E4~~ | ~~1896961-001~~ | ~~BINDING POST~~ | |
| ~~E5~~ | ~~1896961-002~~ | ~~BINDING POST~~ | |
| ~~E6~~ | ~~1896961-002~~ | ~~BINDING POST~~ | |
| ~~E7~~ | ~~1896961-001~~ | ~~BINDING POST~~ | |
| ~~E8~~ | ~~1896961-002~~ | ~~BINDING POST~~ | |
| ~~E9~~ | ~~1896961-002~~ | ~~BINDING POST~~ | |
| E10 | 1896962-002 | TERMINAL-INSULATED | |
| E11 | 1896962-002 | TERMINAL-INSULATED | |
| E12 | 1896962-002 | TERMINAL-INSULATED | |
| E13 | 1896962-002 | TERMINAL-INSULATED | |
| E14 | 1896962-002 | TERMINAL-INSULATED | |
| E15 | 1896962-002 | TERMINAL-INSULATED | |
| E16 | 1896962-002 | TERMINAL-INSULATED | |
| E17 | 1896962-002 | TERMINAL-INSULATED | |
| E18 | 1896962-002 | TERMINAL-INSULATED | |
| E19 | 1896962-002 | TERMINAL-INSULATED | |
| | | | |
| E20A | 1015896-1 | TERMINAL, FEED THRU, INSULATED | |
| E21 | 1896962-002 | TERMINAL, FEED THRU, INSULATED | |
| | | | |
| E22A | 1015896-1 | TERMINAL, FEED THRU, INSULATED | |
| F1 | MS90078-4 | FUSE | 1/8 AMP |
| J1 | 1015924-100 | CONNECTOR | |
| J2 | 1015897-015 | CONNECTOR | |
| J3 | 1016174-001 | CONNECTOR | |
| J4 | 1016174-001 | CONNECTOR | |
| P2 | 1016072-015 | CONNECTOR | |
| R10 | 1015813-001 THRU -337 | RESISTOR | ▷2 |
| R11 | 1015812-008 | RESISTOR-VARIABLE | 5K ± 5% |
| R12 | 1015816-001 | RESISTOR | 50K ± 0.25% |
| R13 | 1015812-008 | RESISTOR-VARIABLE | 5K ± 5% |
| R14 | 1015816-001 | RESISTOR | 50K ± 0.25% |
| R15 | 1015812-008 | RESISTOR-VARIABLE | 5K ± 5% |
| R16 | 1015816-001 | RESISTOR | 50K ± 0.25% |
| R17 | 1015812-008 | RESISTOR-VARIABLE | 5K ± 5% |
| R18 | 1015816-001 | RESISTOR | 50K ± 0.25% |
| R19 | 1015812-012 | RESISTOR-VARIABLE | 45K ± 5% |
| R20 | 1015814-001 | RESISTOR | 450K ± 0.25% |
| R21 | 1015812-010 | RESISTOR-VARIABLE | 20K ± 5% |
| R22 | 1015816-002 | RESISTOR | 90K ± 0.25% |
| R23 | 1015812-011 | RESISTOR-VARIABLE | 40K ± 5% |
| R24 | 1015814-002 | RESISTOR | 1M ± 0.05% |
| R25 | 1015812-009 | RESISTOR-VARIABLE | 10K ± 5% |
| R26 | 1015815-001 | RESISTOR | 225K ± 0.05% |
| R27 | 1015809-001 | RESISTOR | 20K ± 1% |
| R28 | 1015815-002 | RESISTOR | 200K ± 0.1% |
| R29 | 1015816-003 | RESISTOR | 18.800K ± 0.02% |
| R30 | 1015809-002 | RESISTOR | 1K ± 3% |
| R31 | 1015816-004 | RESISTOR | 80.20K ± 0.02% |
| R32 | 1015816-003 | RESISTOR | 18.800K ± 0.02% |
| R33 | 1015809-002 | RESISTOR | 1K ± 3% |
| R34 | 1015815-003 | RESISTOR | 146.87K ± 0.02% |
| R35 | 1015816-005 | RESISTOR | 100K ± 0.01% |
| R36 | 1015945-003 | RESISTOR-DIVIDER | 100K, ± 0.03% |
| R37 | 1015810-001 | RESISTOR | 1K ± 0.1% |
| R38 | 1015811-001 | RESISTOR | ▷3 |
| R39 | 1896970-410 | RESISTOR | 18K, 1W |
| R40 | 1016131-223 | RESISTOR | 6K, 15W |
| | | | |
| | | | |
| | | | |
| | | | |
| S1 | 101859-001 | SWITCH | |
| S2 | 101858-003 | SWITCH | |
| S3 | 101858-002 | SWITCH | |
| | | | |
| | | | |

**FOR INFORMATION ONLY**
CLASS B RELEASE TDR No. 01389 DATE 5-25-63

| NEXT ASSY | USED ON |
|---|---|
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN A. J. Kuder DATE 26-APR-63
CHECKED W. Bull 15 MAY '63
APPROVAL R. Kelly 15 MAY 63
APPROVAL [illegible] 15 MAY 63
NASA APPROVAL J. P. Gunning 5-28-63
MIT APPROVAL 24 May 63

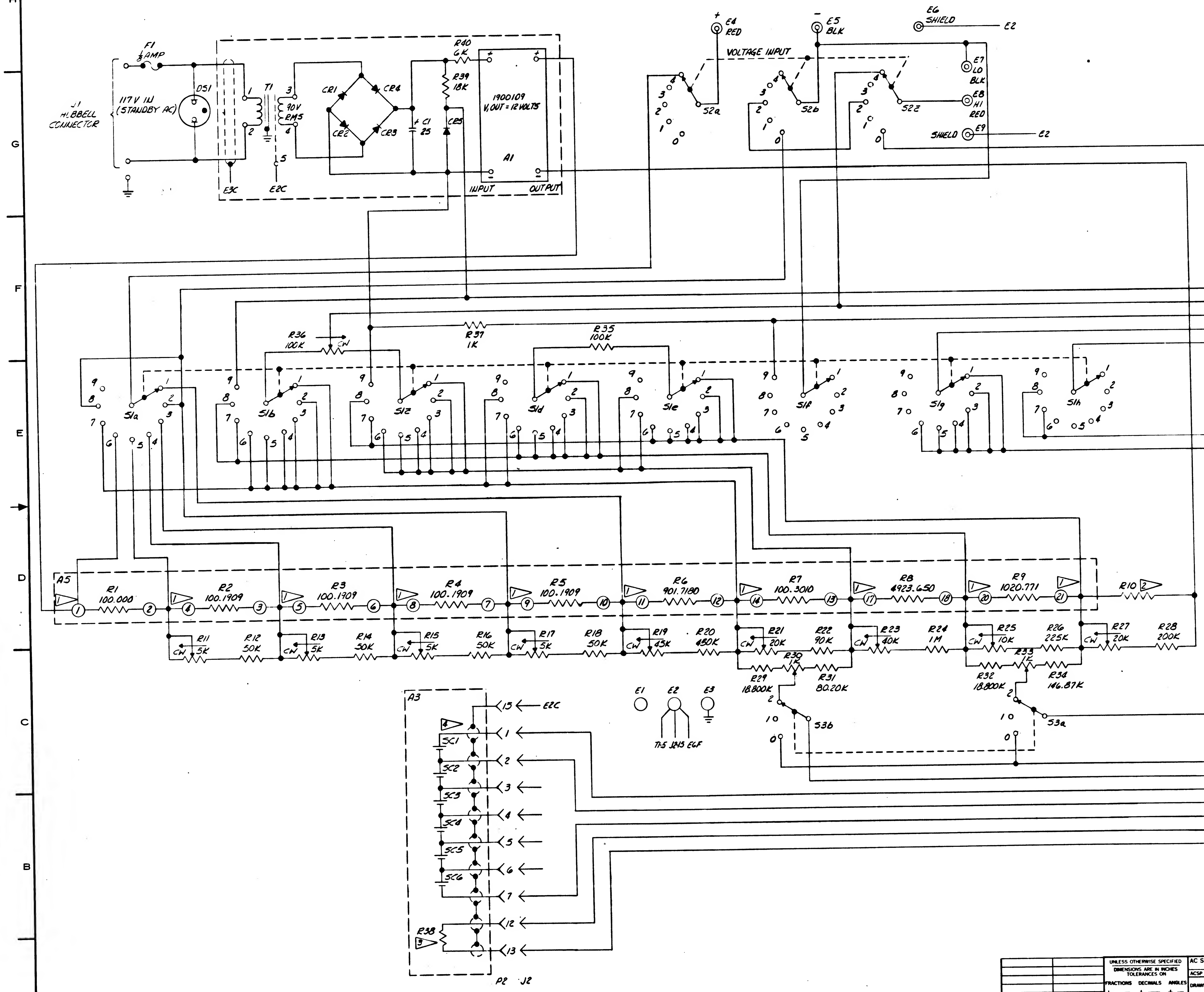
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM
CURRENT SOURCE MONITOR

CODE IDENT NO.
SIZE E
1900083
SCALE —
SHEET 2 OF 2

1900083 B

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |



**FOR INFORMATION ONLY**

**CLASS B RELEASE TDR No.** ______ **DATE** 5-28-63

| | |
|---|---|
| | 1900053 |
| NEXT ASSY | USED ON |
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-397

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN A.J. Fluegge DATE 25 APR 63
CHECKED 15 MAY 63
APPROVAL 15 MAY 63
APPROVAL 15 MAY 63
NASA APPROVAL 5-28-63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

SCHEMATIC DIAGRAM-
CURRENT SOURCE MONITOR

CODE IDENT NO
SIZE E
1900083
SCALE —
SHEET 1 OF 2

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

▷1 ALL CONNECTIONS MADE AT ONE POINT (TOTAL OF 10 POINTS).

▷2 R10, TYPE WITH 0.01 % TOLERANCE SELECTED FOR A PARTICULAR VOLTAGE REFERENCE TO GIVE 7.4 VOLTS ACROSS THE SRS RATIO SET, WHEN R27 ADJUSTED AT CENTER OF ITS RANGE T.C. < ±2.5 ppm/°C.

▷3 1K, @ 25°C T.C. 5000 ppm/°C ±10%.

▷4 CAUTION: STANDARD CELL

DRAWINGS FOR REFERENCE
1900053 - ASSEMBLY DRAWING
- WIRING DIAGRAM

| REF DESIG | PART NUMBER | DESCRIPTION | SCHEMATIC DIAGRAM OR VALUE, TOL & RATING |
|---|---|---|---|
| SC1 | 1015801 | STANDARD CELL ▷4 | |
| SC2 | 1015801 | STANDARD CELL ▷4 | |
| SC3 | 1015801 | STANDARD CELL ▷4 | |
| SC4 | 1015801 | STANDARD CELL ▷4 | |
| SC5 | 1015801 | STANDARD CELL ▷4 | |
| SC6 | 1015801 | STANDARD CELL ▷4 | |
| | | | |
| | | | |
| T1 | 1015806 | TRANSFORMER | |
| | | | |
| | | | |
| XDS1 | | | |
| | | | |
| | | | |
| XF1 | MS26572-001 | FUSE HOLDER | |

| REF DESIG | PART NUMBER | DESCRIPTION | SCHEMATIC DIAGRAM OR VALUE, TOL & RATING |
|---|---|---|---|
| A1 | 1900109 | VOLTAGE REFERENCE | 1900110 |
| | | | |
| A3 | 1900114 | STD CELL ASSY | 1900080 |
| A5 | 1015807 | RATIO SET | |
| | | | |
| | | | |
| C1 | CE41C250K | CAPACITOR | 25 µf |
| | | | |
| | | | |
| CR1 | 1010362-001 | DIODE | 1N647 |
| CR2 | 1010362-001 | DIODE | 1N647 |
| CR3 | 1010362-001 | DIODE | 1N647 |
| CR4 | 1010362-001 | DIODE | 1N647 |
| CR5 | 1010258 | DIODE | 1N763 |
| | | | |
| | | | |
| DS1 | | LAMP | |
| | | | |
| | | | |
| E1 | 1896961-002 | BINDING POST | |
| E2 | 1896961-002 | BINDING POST | |
| E3 | | BINDING POST | |
| E4 | 1896961-001 | BINDING POST | |
| E5 | 1896961-002 | BINDING POST | |
| E6 | 1896961-002 | BINDING POST | |
| E7 | 1896961-001 | BINDING POST | |
| E8 | 1896961-002 | BINDING POST | |
| E9 | 1896961-002 | BINDING POST | |
| E10 | 1896962-002 | BINDING POST | |
| E11 | 1896962-002 | BINDING POST | |
| E12 | 1896962-002 | BINDING POST | |
| E13 | 1896962-002 | BINDING POST | |
| E14 | 1896962-002 | BINDING POST | |
| E15 | 1896962-002 | BINDING POST | |
| E16 | 1896962-002 | BINDING POST | |
| E17 | 1896962-002 | BINDING POST | |
| E18 | 1896962-002 | BINDING POST | |
| E19 | 1896962-002 | BINDING POST | |
| | | | |
| E20A | 1015896-1 | BINDING POST | |
| E21 | 1896962-002 | BINDING POST | |
| | | | |
| E22A | 1015896-1 | BINDING POST | |
| F1 | MS90078-4 | FUSE | 1/8 AMP |
| | | | |
| J1 | | CONNECTOR | |
| J2 | 1015897-015 | CONNECTOR | |
| P2 | | CONNECTOR | |
| | | | |
| R10 | | RESISTOR | ▷2 |
| R11 | 1015812-008 | RESISTOR-VARIABLE | 5K ± 5% |
| R12 | 1015816-001 | RESISTOR | 50K ± 0.25% |
| R13 | 1015812-008 | RESISTOR-VARIABLE | 5K ± 5% |
| R14 | 1015816-001 | RESISTOR | 50K ± 0.25% |
| R15 | 1015812-008 | RESISTOR-VARIABLE | 5K ± 5% |
| R16 | 1015816-001 | RESISTOR | 50K ± 0.25% |
| R17 | 1015812-008 | RESISTOR-VARIABLE | 5K ± 5% |
| R18 | 1015816-001 | RESISTOR | 50K ± 0.25% |
| R19 | 1015812-012 | RESISTOR-VARIABLE | 45K ± 5% |
| R20 | 1015814-001 | RESISTOR | 450K ± 0.25% |
| R21 | 1015812-010 | RESISTOR-VARIABLE | 20K ± 5% |
| R22 | 1015816-002 | RESISTOR | 90K ± 0.25% |
| R23 | 1015812-011 | RESISTOR-VARIABLE | 40K ± 5% |
| R24 | 1015814-002 | RESISTOR | 1M ± 0.05% |
| R25 | 1015812-009 | RESISTOR-VARIABLE | 10K ± 5% |
| R26 | 1015815-001 | RESISTOR | 225K ± 0.05% |
| R27 | 1015812-010 | RESISTOR | 20K ± 5% |
| R28 | 1015815-002 | RESISTOR | 200K ± 0.1% |
| R29 | 1015816-003 | RESISTOR | 18.800K ± 0.02% |
| R30 | 1015809-002 | RESISTOR | 1K ± 3% |
| R31 | 1015816-004 | RESISTOR | 80.20K ± 0.02% |
| R32 | 1015816-003 | RESISTOR | 18.800K ± 0.02% |
| R33 | 1015809-002 | RESISTOR | 1K ± 3% |
| R34 | 1015815-003 | RESISTOR | 146.87K ± 0.02% |
| R35 | 1015814-005 | RESISTOR | 100K ± 0.01% |
| R36 | 1015808-1 | RESISTOR | 100K ± 0.05% |
| R37 | 1015810-001 | RESISTOR | 1K ± 0.1% |
| R38 | 1015811-001 | RESISTOR | ▷3 |
| R39 | 1010452-276 | RESISTOR | 18K, 1W |
| R40 | 1010262- | RESISTOR | 6K, 10W |
| | | | |
| | | | |
| | | | |
| | | | |
| S1 | 101858-002 | SWITCH | |
| S2 | 101858-002 | SWITCH | |
| S3 | 101858-002 | SWITCH | |
| | | | |
| | | | |

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD |

**FOR INFORMATION ONLY**

**CLASS B RELEASE TDR No.** 01389 **DATE** 5-29-63

| NEXT ASSY | USED ON |
|---|---|
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± — ± — ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN A.J. [illegible] DATE 26 APR 63
CHECKED [illegible] 15 MAY 63
APPROVAL [illegible] 15 MAY 63
APPROVAL [illegible] 15 MAY 63
NASA APPROVAL [illegible] 5-28-63
MIT APPROVAL [illegible]

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

SCHEMATIC DIAGRAM
CURRENT SOURCE MONITOR

CODE IDENT NO
SIZE E
1900083
SCALE —
SHEET [illegible] OF 3

INCHES
PHOTOGRAPHIC SCALE ONLY

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| | | | | | |

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

MUST BE FREE FROM BURRS AND SHARP CORNERS.

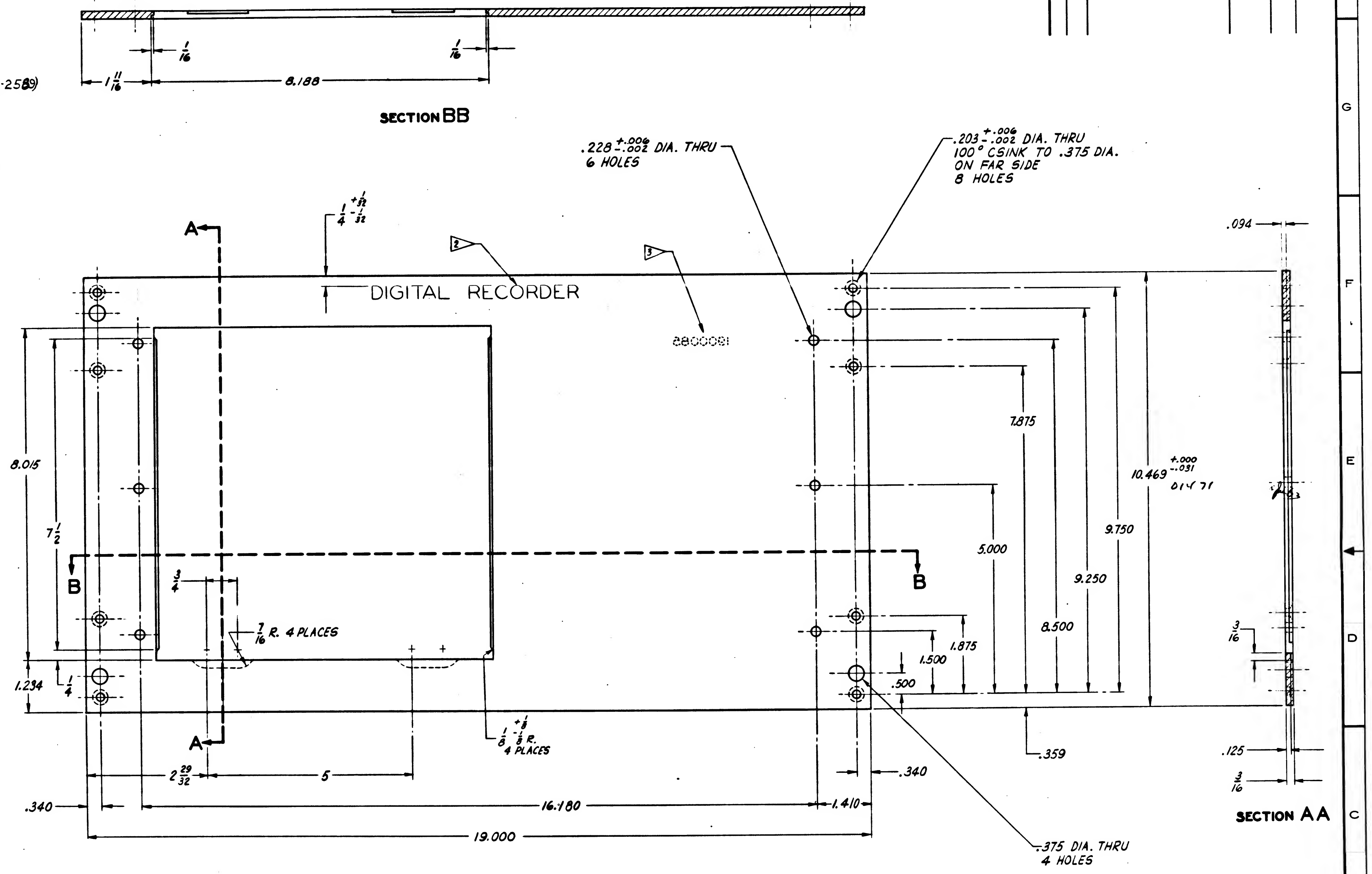
1 MATERIAL:
ALUMINUM ALLOY PER QQ-A-318, TEMPER H-34 (ES-2105).

FINISH:
CHEMICAL FILM PER MIL-C-5541 (ES-591) ALL OVER.

APPLY TO FRONT AND EDGES OF PANEL MIL-P-8585 (ES-2589) PRIMER AND TT-E-529, CLASS A ENAMEL, SEMI-GLOSS, LIGHT GRAY, COLOR 26440 OF FED-STD-595 PER MIL-F-14072 (SIG C) FIN. P515.

2 SILK SCREEN CHARACTERS 5/16 HIGH PER ND 1002122 (FUTURA DEMI-BOLD) USING ENAMEL, SEMI-GLOSS, INSTRUMENT BLACK, COLOR 514 OF ANA BUL. 157 PER ND 1002019, CENTRALIZE AS SHOWN.

3 IDENTIFY USING DRAWING NO. AND REVISION LETTER, AT THE INDICATED LOCATION PER MIL-STD-130 (ES-267).



FOR INFORMATION ONLY
CLASS B RELEASE TDR No. 2-2 DATE 5 Jun 63

| | | | | |
|---|---|---|---|---|
| 1900052-011 | 1900004 | UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON<br>FRACTIONS +1/64 -1/64 DECIMALS +.005 -.005 ANGLES +1° -1°<br>DO NOT SCALE THIS DRAWING | AC SPARK PLUG DIVISION, GMC<br>MILWAUKEE, WISCONSIN<br>ACSP PN<br>DRAWN J.A. KOSIDOWSKI DATE 1 MAY 63<br>CHECKED Ed Foster 16 MAY 63<br>APPROVAL A. Smith 17 MAY 63<br>APPROVAL 17 MAY 63 | MANNED SPACECRAFT CENTER<br>HOUSTON, TEXAS<br>PANEL, FRONT |
| NEXT ASSY | USED ON | MATERIAL 1 | NASA APPROVAL<br>MIT APPROVAL | CODE IDENT NO<br>SIZE E<br>1900085 |
| APPLICATION | | CONTRACT | | SCALE 1/1<br>SHEET |

17 MAY 63

1900085
B

REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
|---|---|---|---|---|---|

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

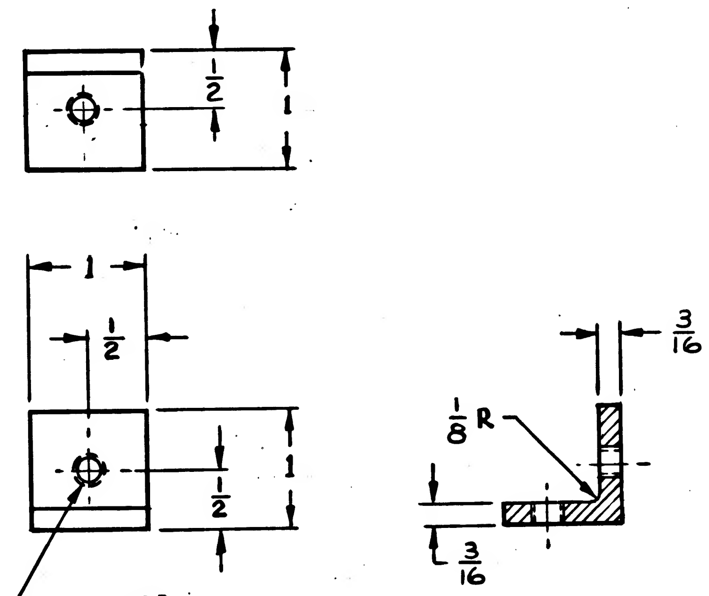
IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (ES-267)

MUST BE FREE FROM BURRS AND SHARP EDGES

FINISH: CHEMICAL FILM PER MIL-C-5541 (ES-591)

CLASS B RELEASE TDR No. 01471 DATE 3 June 63

**FOR INFORMATION ONLY**



.203 $^{+.003}_{-.002}$ DIA THRU
CSK 90° TO MAJOR DIA OF THD
1/4-20 UNC-2B THD
2 HOLES

| NEXT ASSY | USED ON |
|---|---|
| 1900052-011 | 1900004 |

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

| FRACTIONS | DECIMALS | ANGLES |
|---|---|---|
| + 1/64 | +.005 | + 1° |
| − 1/64 | −.005 | − 1° |

DO NOT SCALE THIS DRAWING

MATERIAL AL ALY PER QQ-A-318, TEMPER H-32 (ES-2105)

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN R. Fox DATE 2 MAY 63
CHECKED Ed Foster 16 MAY 63
APPROVAL A. Smith 17 MAY 63
APPROVAL A. Model 17 MAY 63

NASA APPROVAL 6/6/63
C. Gedeman 6/4/63
MIT APPROVAL 5 June 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

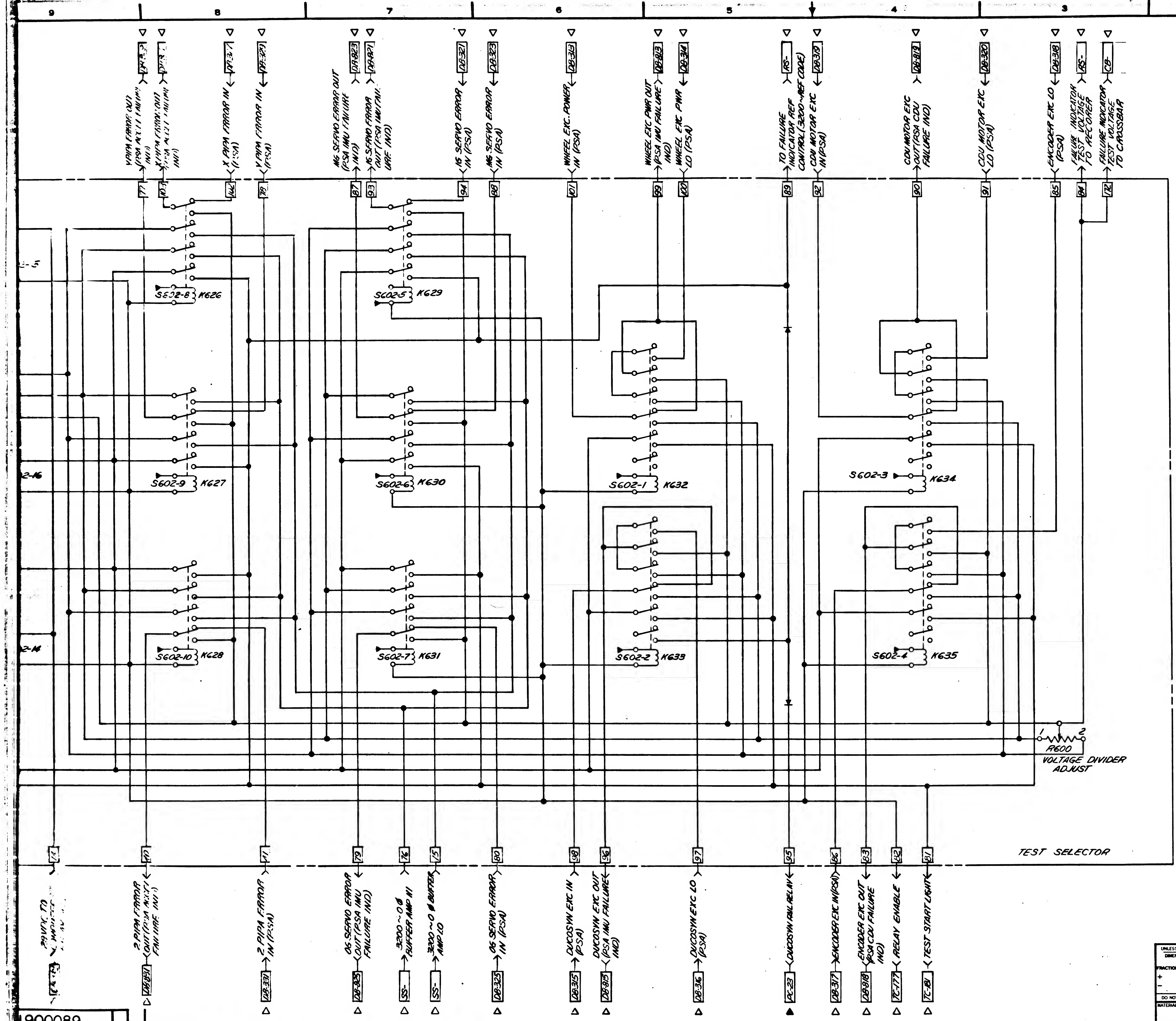
BRACKET, ANGLE

CODE IDENT NO.
SIZE C
1900086
SCALE 1/1
SHEET 1 OF 1

MIL 1077C—P

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| C | | REPLACES REVISION B WITH CHANGE PER TDRR 03396 | MXC 88578 | 23 AUG 63 | RC<br>R-W |



Y PIPA ERROR OUT (PSA ACCEL FAILURE IND) 77 DB-8..
X PIPA ERROR OUT (PSA ACCEL FAILURE IND) 103 DB-8..
X PIPA ERROR IN (PSA) 102 DB-327
Y PIPA ERROR IN (PSA) 78 DB-329
MG SERVO ERROR OUT (PSA IMU FAILURE IND) 87 DB-823
IG SERVO ERROR OUT (PSA IMU FAILURE IND) 93 DB-821
IG SERVO ERROR IN (PSA) 94 DB-321
MG SERVO ERROR IN (PSA) 88 DB-323
WHEEL EXC. POWER IN (PSA) 101 DB-313
WHEEL EXC PWR OUT (PSA IMU FAILURE IND) 99 DB-813
WHEEL EXC PWR LO (PSA) 100 DB-314
TO FAILURE INDICATOR REF CONTROL (3200~REF CODE) 89 RS-
CDU MOTOR EXC IN (PSA) 92 DB-319
CDU MOTOR EXC OUT (PSA CDU FAILURE IND) 90 DB-819
CDU MOTOR EXC LO (PSA) 91 DB-320
ENCODER EXC LO (PSA) 85 DB-318
FAILURE INDICATOR TEST VOLTAGE TO RECORER 84 RS-
FAILURE INDICATOR TEST VOLTAGE TO CROSSBAR 72 CB-
S602-8 K626
S602-9 K627
S602-10 K628
S602-5 K629
S602-6 K630
S602-7 K631
S602-1 K632
S602-2 K633
S602-3 K634
S602-4 K635
R600 VOLTAGE DIVIDER ADJUST
1
2
TEST SELECTOR
28VDC TO COMPUTER RELAY 14
Z PIPA ERROR OUT (PSA ACCEL FAILURE IND) 10 DB-831
Z PIPA ERROR IN (PSA) 11 DB-331
OG SERVO ERROR OUT (PSA IMU FAILURE IND) 79 DB-825
3200~0Ø BUFFER AMP HI 76 SS-
3200~0Ø BUFFER AMP LO 75 SS-
OG SERVO ERROR IN (PSA) 80 DB-325
DUCOSYN EXC IN (PSA) 98 DB-315
DUCOSYN EXC OUT (PSA IMU FAILURE IND) 96 DB-815
DUCOSYN EXC LO (PSA) 97 DB-316
DUCOSYN FAIL RELAY 95 PC-23
ENCODER EXC IN (PSA) 86 DB-317
ENCODER EXC OUT (PSA CDU FAILURE IND) 83 DB-818
RELAY ENABLE 82 TC-177
TEST START LIGHT 81 TC-181
2-5
2-16
2-14

**FOR INFORMATION ONLY**

**CLASS B RELEASE TDR No.** 01467 **DATE** 5 JUNE 63

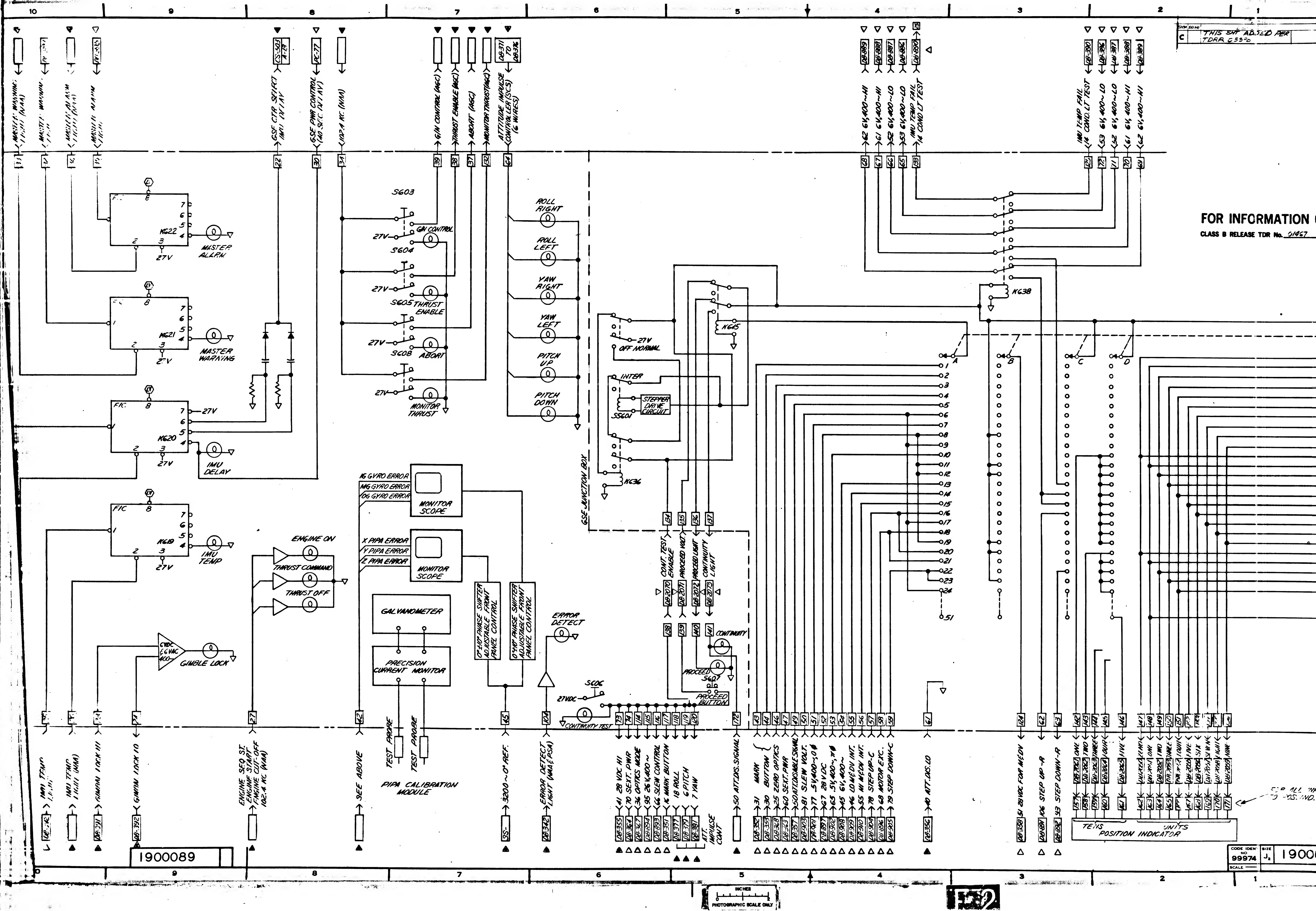
Ⓒ REPLACES REVISION B WITH CHANGE PER MXC 188572

COORDINATE WITH 1900065 FOR GROUNDING & SIGNAL ISOLATION REQUIREMENTS

- ▷ SUBSYSTEM TESTING
- ▶ SYSTEM TESTING
- ⧐ SUBSYSTEM & SYSTEM TESTING
- DB- DISTRIBUTION BLOCK
- TC- TEST CONTROL
- RS- RECORDER SELECT
- PC- POWER CONTROL
- SS- SIGNAL SELECT
- CS- COUNTER SELECT
- CB- CROSS BAR

| C | C |
|---|---|
| SHEET 1 | SHEET 2 |
| REVISION STATUS OF SHEETS | |

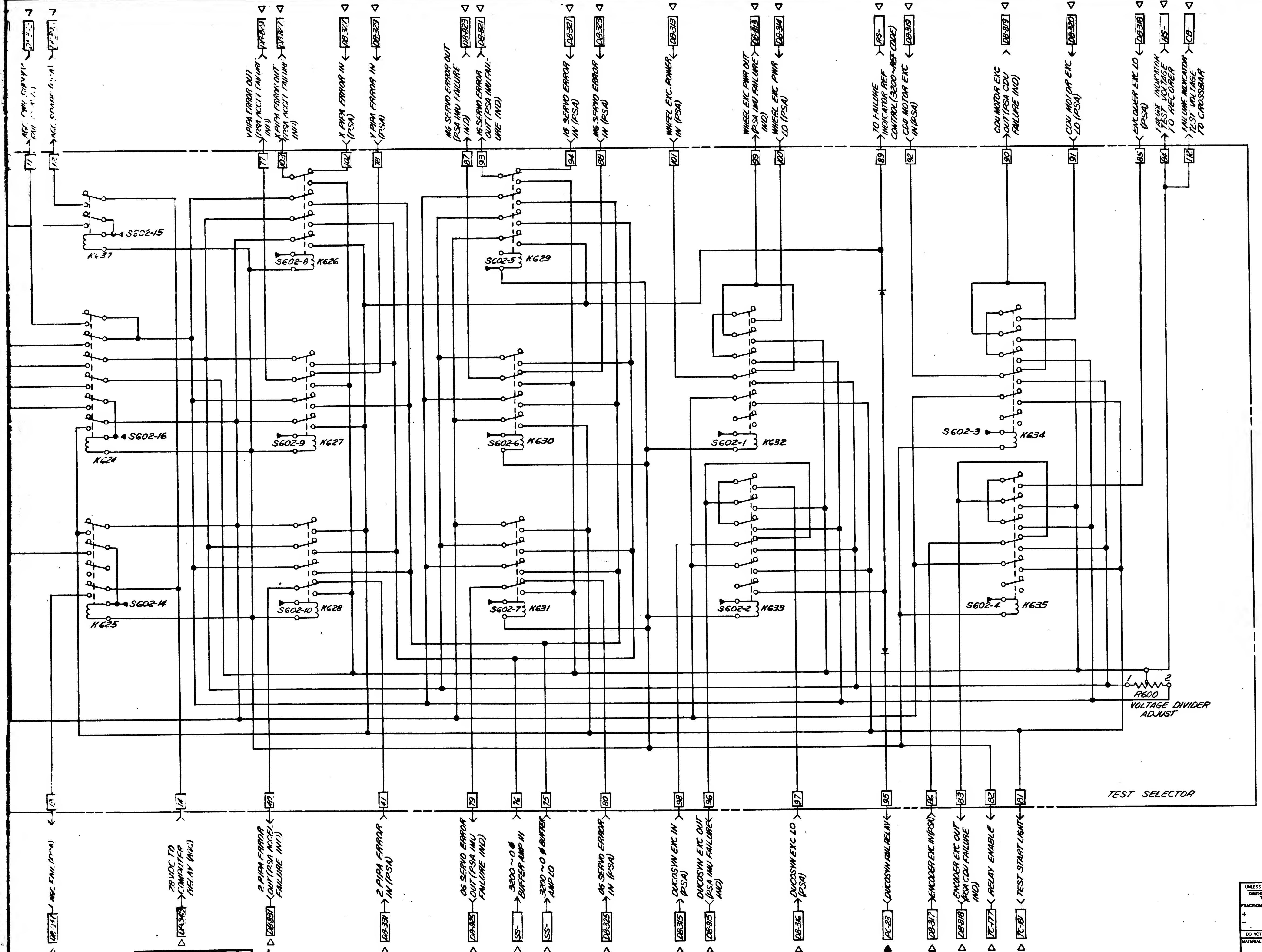
| | | |
|---|---|---|
| UNLESS OTHERWISE SPECIFIED<br>DIMENSIONS ARE IN INCHES<br>TOLERANCES ON<br>FRACTIONS DECIMALS ANGLES<br>+ + +<br>- - - | AC SPARK PLUG DIVISION, GMC<br>MILWAUKEE, WISCONSIN<br>ACSP PN<br>DRAWN R.A. ROZWADOWSKI DATE 17 MAY 63<br>CHECKED G. WARISH 27 MAY 63<br>APPROVAL L. TRIGGS 27 MAY 63<br>APPROVAL | MANNED<br>SPACECRAFT CENTER<br>HOUSTON, TEXAS<br>MECHANIZATION DIAGRAM-GSE SYSTEM & SUBSYSTEM MONITOR-DISPLAY & CONTROLS |
| DO NOT SCALE THIS DRAWING<br>MATERIAL<br>CONTRACT | NASA APPROVAL<br>MIT APPROVAL | CODE IDENT NO 99974 SIZE J2 1900089<br>SCALE — SHEET 1 OF 2 |



FOR INFORMATION

CLASS B RELEASE TDR No. 01467

| CODE IDENT NO | SIZE | |
|---|---|---|
| 99974 | J2 | 19000 |
| SCALE — | | |



1900089

| REVISIONS | | | |
|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO |
| C | | REPLACES REVISION B WITH CHANGE PER TDRR | |

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01467 DATE 5 JUNE

Ⓒ REPLACES REVISION B WITH CHANGE PER MXC 188572

COORDINATE WITH 1900065 FOR GROU & SIGNAL ISOLATION REQUIREMENTS

▷ SUBSYSTEM TESTING
▶ SYSTEM TESTING
▶ SUBSYSTEM & SYSTEM TESTI
DB- DISTRIBUTION BLOCK
TC- TEST CONTROL
RS- RECORDER SELECT
PC- POWER CONTROL
SS- SIGNAL SELECT
CS- COUNTER SELECT
CB- CROSS BAR

| C | C |
|---|---|
| SHEET 1 | SHEET 2 |
| REVISION STATUS OF SHEETS | |

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R A ROZWADOWSKI DATE 17 MAY 63
CHECKED G. WARISH 27 MAY 63
APPROVAL L. TRIGGS 27 MAY 63
APPROVAL
NASA APPROVAL
MIT APPROVAL

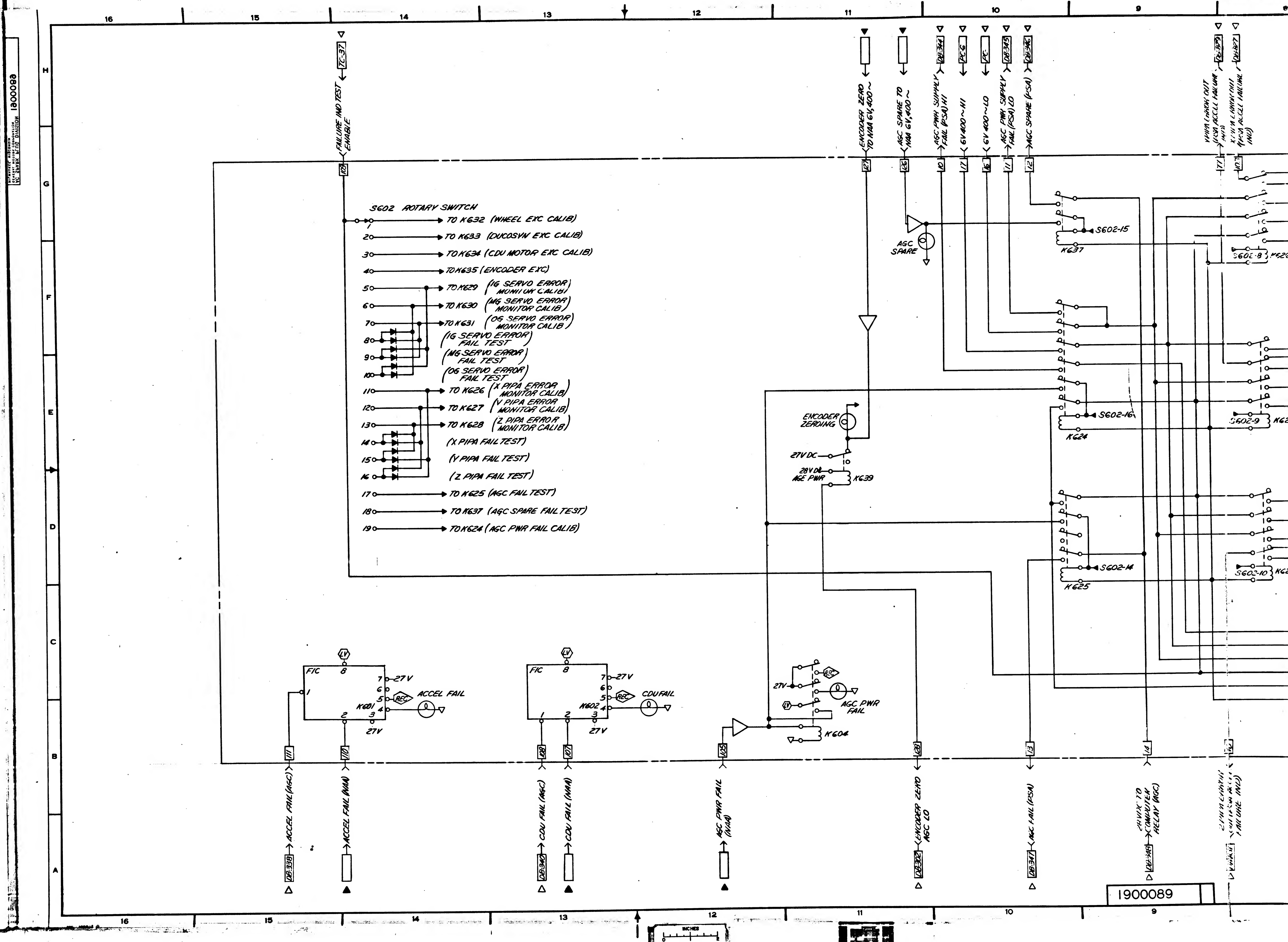
MANNED SPACECRAFT CENTE
HOUSTON TEXAS

MECHANIZATION DIAG
SYSTEM & SUBSYSTEM
DISPLAY & CONT

CODE IDENT NO 99974
SIZE J2
19000
SCALE

INCHES
0 2
PHOTOGRAPHIC SCALE ONLY

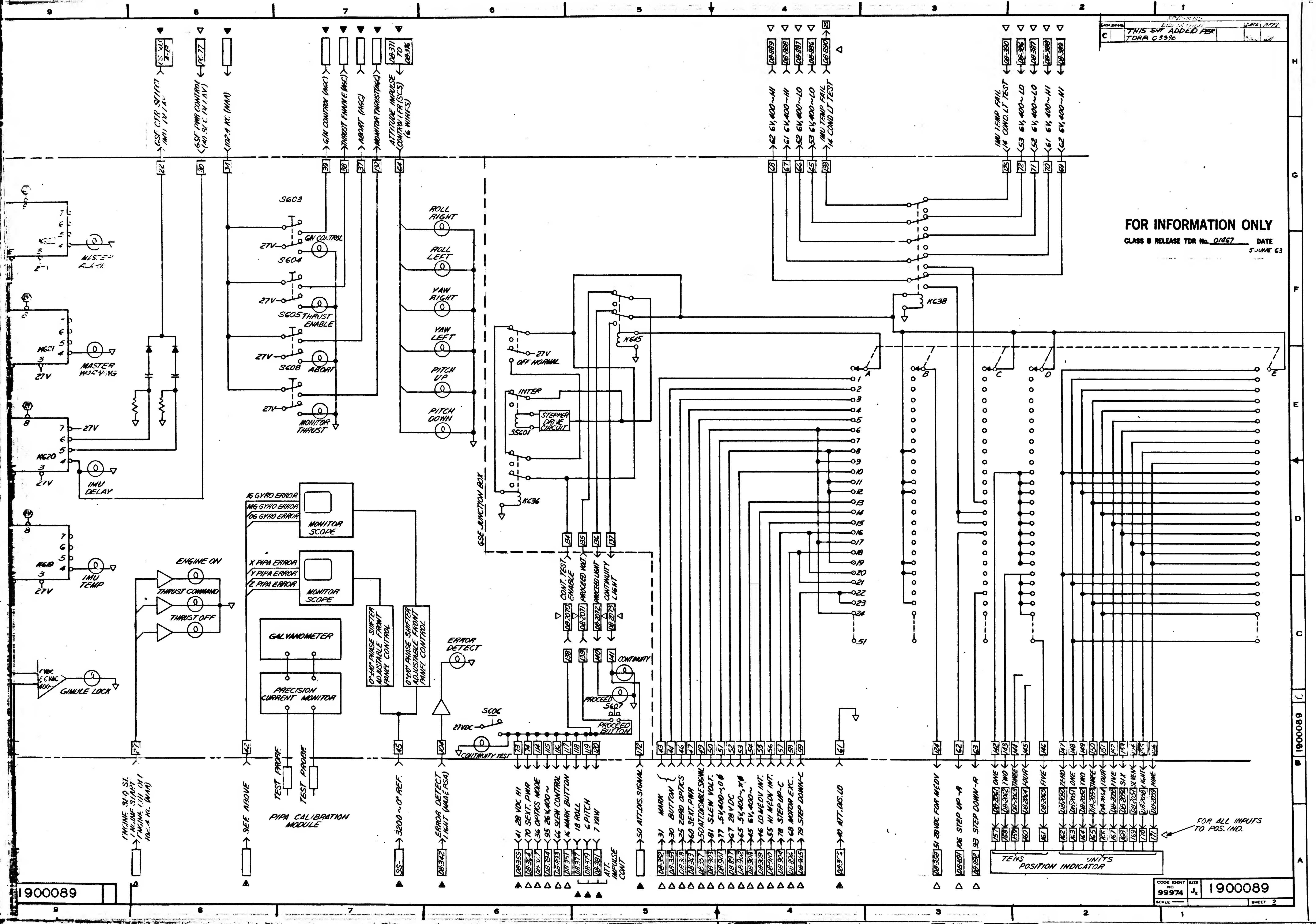
E-2


16
15
14
13
12
11
10
9
H
G
F
E
D
C
B
A
TC-37
FAILURE IND TEST ENABLE
128
ENCODER ZERO TO NAA 6V,400~
AGC SPARE TO NAA 6V,400~
AGC PWR SUPPLY FAIL (PSA) HI
6V 400~HI
6V 400~LO
AGC PWR SUPPLY FAIL (PSA) LO
AGC SPARE (PSA)
DB-344
PC-6
PC-
DB-345
DB-346
127
126
10
17
16
11
12
77
107
S602 ROTARY SWITCH
1 → TO K632 (WHEEL EXC CALIB)
2 → TO K633 (DUCOSYN EXC CALIB)
3 → TO K634 (CDU MOTOR EXC CALIB)
4 → TO K635 (ENCODER EXC)
5 → TO K629 (IG SERVO ERROR MONITOR CALIB)
6 → TO K630 (MG SERVO ERROR MONITOR CALIB)
7 → TO K631 (OG SERVO ERROR MONITOR CALIB)
8 (IG SERVO ERROR FAIL TEST)
9 (MG SERVO ERROR FAIL TEST)
10 (OG SERVO ERROR FAIL TEST)
11 → TO K626 (X PIPA ERROR MONITOR CALIB)
12 → TO K627 (Y PIPA ERROR MONITOR CALIB)
13 → TO K628 (Z PIPA ERROR MONITOR CALIB)
14 (X PIPA FAIL TEST)
15 (Y PIPA FAIL TEST)
16 (Z PIPA FAIL TEST)
17 → TO K625 (AGC FAIL TEST)
18 → TO K637 (AGC SPARE FAIL TEST)
19 → TO K624 (AGC PWR FAIL CALIB)
AGC SPARE
K637
S602-15
S602-8
S602-16
K624
S602-9
S602-14
K625
S602-10
ENCODER ZEROING
27V DC
28V DC AGE PWR
K639
FIC
8
LV
7 27V
6
5 REC
4
K601
1
2
3
27V
ACCEL FAIL
K602
CDU FAIL
27V
REC
AGC PWR FAIL
K604
111
110
108
107
105
128
13
14
ACCEL FAIL (AGC)
ACCEL FAIL (NAA)
CDU FAIL (AGC)
CDU FAIL (NAA)
AGC PWR FAIL (NAA)
ENCODER ZERO AGC LO
AGC FAIL (PSA)
28VDC TO COMPUTER RELAY (AGC)
DB-338
DB-340
DB-302
DB-347
DB-348
1900089
INCHES
0
1
2
PHOTOGRAPHIC SCALE ONLY
AC SPARK PLUG DIVISION
GENERAL MOTORS CORPORATION
MILWAUKEE WISCONSIN
1900089

| SYM | ZONE | DESCRIPTION | DATE | APPD |
|---|---|---|---|---|
| C | | THIS SHT ADDED PER TDRR 03396 | | |

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01467 DATE 5 JUNE 63

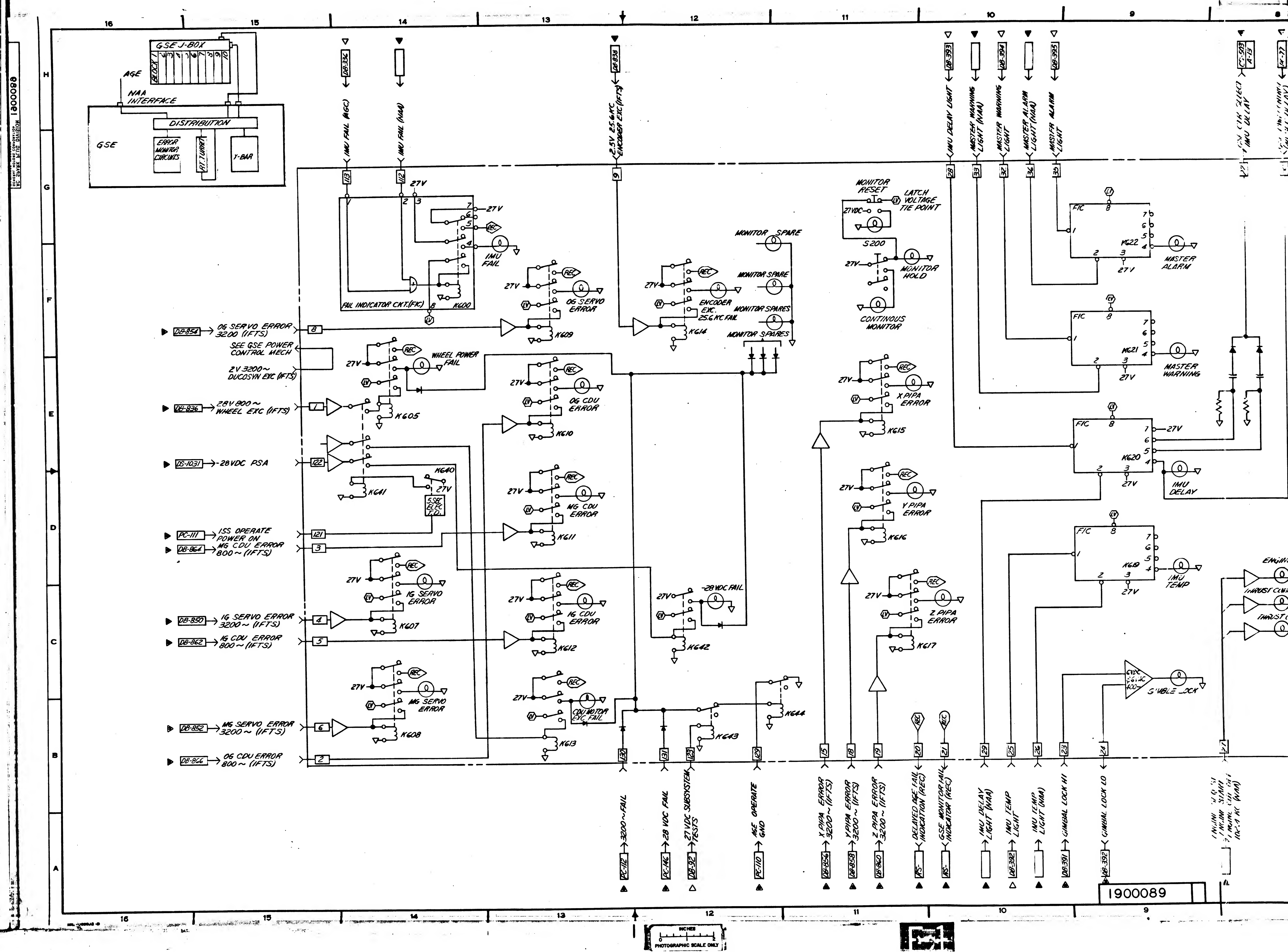


1900089

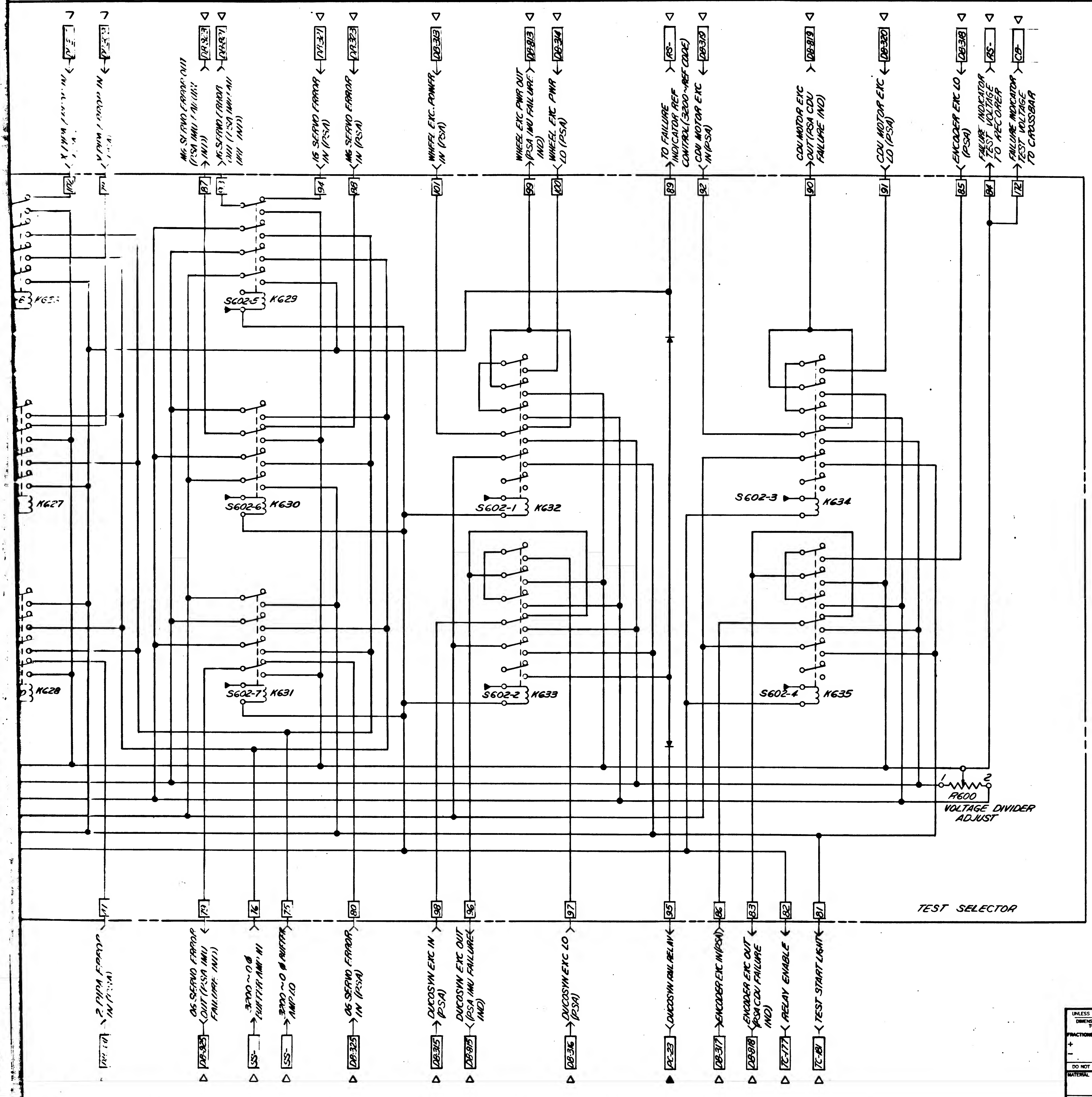
| CODE IDENT NO | SIZE | |
|---|---|---|
| 99974 | J2 | 1900089 |

SCALE — SHEET 2

INCHES
PHOTOGRAPHIC SCALE ONLY


1900088
AC SPARK PLUG DIVISION
GENERAL MOTORS CORPORATION
16
15
14
13
12
11
10
9
8
H
G
F
E
D
C
B
A
GSE J-BOX
BLOCK 1 2 3 4 5 6 7 8 9 10
AGE
NAA INTERFACE
DISTRIBUTION
GSE
ERROR MONITOR CIRCUITS
RT. TURRET
Y-BAR
DB-336
IMU FAIL (AGC)
IMU FAIL (NAA)
113
112
27V
FAIL INDICATOR CKT. (FIC)
K600
IMU FAIL
REC
LV
DB-838
2.5V 25.6KC ENCODER EXC (IFTS)
9
DB-854
OG SERVO ERROR 3200 (IFTS)
8
SEE GSE POWER CONTROL MECH
2V 3200~ DUCOSYN EXC (IFTS)
WHEEL POWER FAIL
DB-836
28V 800~ WHEEL EXC (IFTS)
1
K605
DS-1031
-28VDC PSA
122
K641
K640
5 SEC ELEC T.D.
PC-111
ISS OPERATE POWER ON
121
DB-864
MG CDU ERROR 800~ (IFTS)
3
IG SERVO ERROR
K607
DB-850
IG SERVO ERROR 3200~ (IFTS)
4
DB-862
IG CDU ERROR 800~ (IFTS)
5
MG SERVO ERROR
K608
DB-852
MG SERVO ERROR 3200~ (IFTS)
6
DB-866
OG CDU ERROR 800~ (IFTS)
2
OG SERVO ERROR
K609
OG CDU ERROR
K610
MG CDU ERROR
K611
IG CDU ERROR
K612
CDU MOTOR EXC FAIL
K613
ENCODER EXC. 25.6KC FAIL
K614
MONITOR SPARE
MONITOR SPARES
-28VDC FAIL
K642
K643
K644
MONITOR RESET
LATCH VOLTAGE TIE POINT
27VDC
S200
MONITOR HOLD
CONTINOUS MONITOR
X PIPA ERROR
K615
Y PIPA ERROR
K616
Z PIPA ERROR
K617
DB-393
DB-394
DB-395
IMU DELAY LIGHT
MASTER WARNING LIGHT (NAA)
MASTER WARNING LIGHT
MASTER ALARM LIGHT (NAA)
MASTER ALARM LIGHT
28
33
32
36
35
FIC
K622
MASTER ALARM
K621
MASTER WARNING
K620
IMU DELAY
K619
IMU TEMP
6V2C 6.6V4C 400~
G'MBLE LOCK
C-503 A-13
H-77
IMU DELAY
ENGINE
THRUST CONT
THRUST C
130
131
123
129
15
18
19
20
21
29
25
26
23
24
3200~FAIL
28 VDC FAIL
27 VDC SUBSYSTEM TESTS
AGE OPERATE GND
X PIPA ERROR 3200~ (IFTS)
Y PIPA ERROR 3200~ (IFTS)
Z PIPA ERROR 3200~ (IFTS)
DELAYED AGE FAIL INDICATION (REC)
GSE MONITOR FAIL INDICATOR (REC)
IMU DELAY LIGHT (NAA)
IMU TEMP LIGHT
IMU TEMP LIGHT (NAA)
GIMBAL LOCK HI
GIMBAL LOCK LO
PC-112
PC-146
DB-92
PC-110
DB-856
DB-858
DB-860
RS-
DB-392
DB-391
1900089
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| Ⓒ C | | REPLACES REVISION B WITH CHANGE PER TDRR 03396 | MXC 188572 | 23 AUG 63 | RC<br>RLW |
| D | | REPLACED WITH CHANGE BY REV E PER MXC 190584 PER TDRR 04717 | | 25 OCT 63<br>NOV 63 | J.J.M.<br>N.N. |



## FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 01467 DATE 5 JUNE 63

Ⓒ REPLACES REVISION B WITH CHANGE PER MXC 188572

Ⓓ REPLACED WITH CHANGE BY REV E PER MXC 190584

COORDINATE WITH 1900065 FOR GROUNDING & SIGNAL ISOLATION REQUIREMENTS

▷ SUBSYSTEM TESTING
▶ SYSTEM TESTING
▶ SUBSYSTEM & SYSTEM TESTING
DB- DISTRIBUTION BLOCK
TC- TEST CONTROL
RS- RECORDER SELECT
PC- POWER CONTROL
SS- SIGNAL SELECT
CS- COUNTER SELECT
CB- CROSS BAR

| D | D |
|---|---|
| SHEET 1 | SHEET 2 |
| REVISION STATUS OF SHEETS | |

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

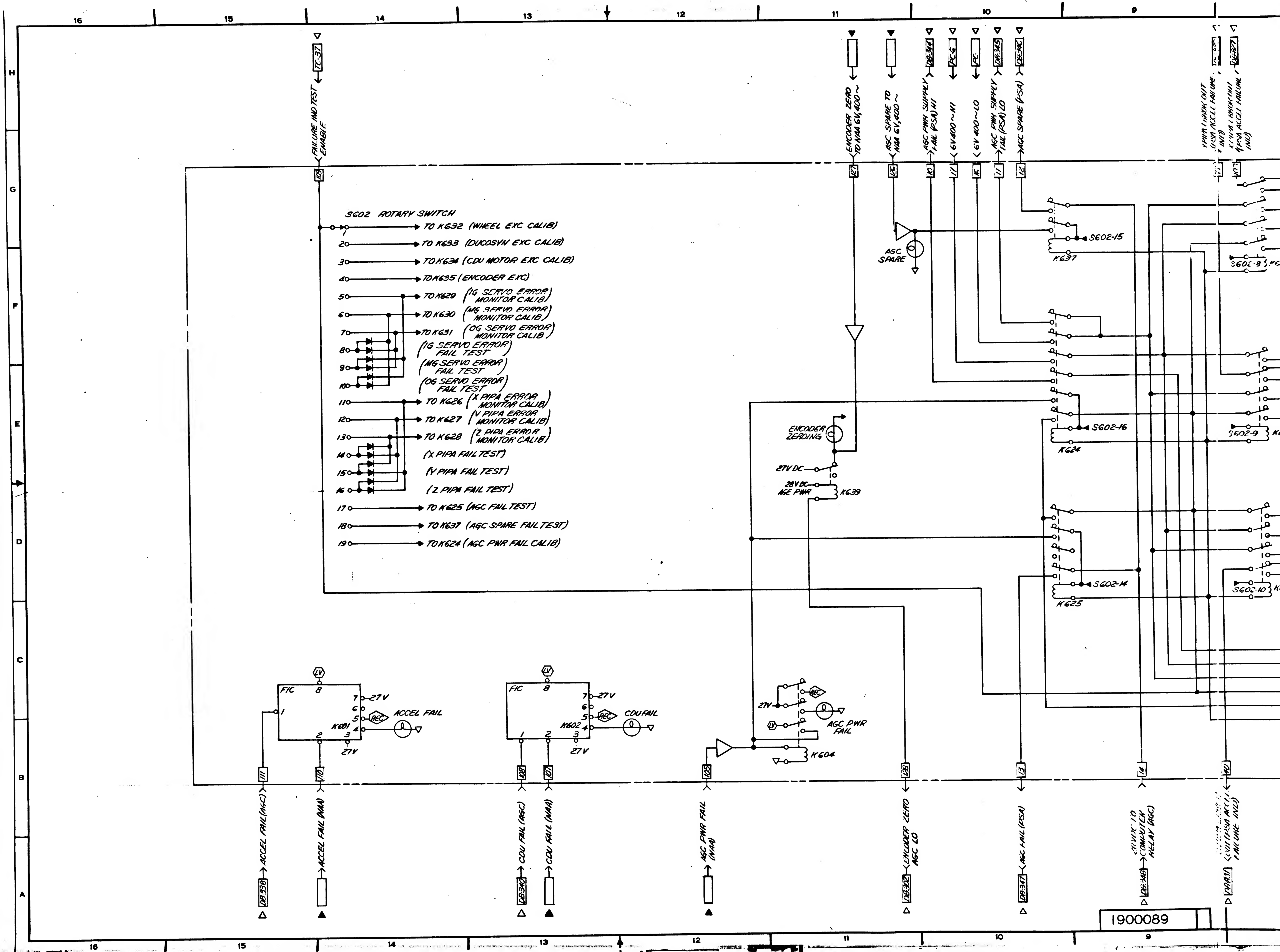
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R.A. ROZWADOWSKI DATE 17 MAY 63
CHECKED G. WARISH 27 MAY 63
APPROVAL J. TRIGGS 27 MAY 63
APPROVAL
NASA APPROVAL
MIT APPROVAL 9/26/63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

MECHANIZATION DIAGRAM-GSE SYSTEM & SUBSYSTEM MONITOR DISPLAY & CONTROLS

CODE IDENT NO. 99974
SIZE J₂
1900089
SCALE
SHEET 1 OF 2

AC SPARK PLUG DIVISION
GENERAL MOTORS CORPORATION
MILWAUKEE, WISCONSIN
1900089

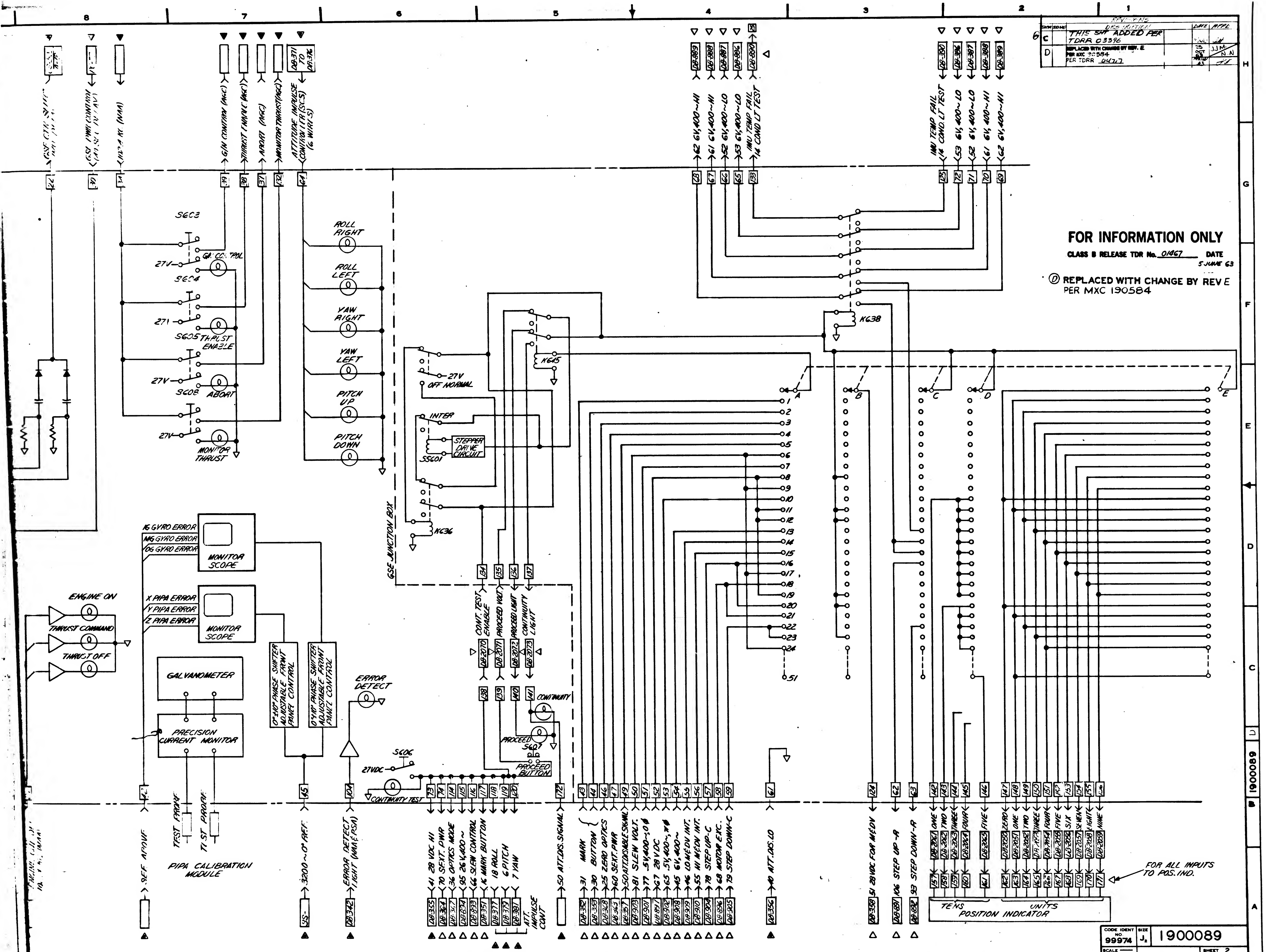

16
15
14
13
12
11
10
9
H
G
F
E
D
C
B
A
TC-37
FAILURE IND TEST ENABLE
103
S602 ROTARY SWITCH
1 TO K632 (WHEEL EXC CALIB)
2 TO K633 (DUCOSYN EXC CALIB)
3 TO K634 (CDU MOTOR EXC CALIB)
4 TO K635 (ENCODER EXC)
5 TO K629 (IG SERVO ERROR MONITOR CALIB)
6 TO K630 (MG SERVO ERROR MONITOR CALIB)
7 TO K631 (OG SERVO ERROR MONITOR CALIB)
8 (IG SERVO ERROR FAIL TEST)
9 (MG SERVO ERROR FAIL TEST)
10 (OG SERVO ERROR FAIL TEST)
11 TO K626 (X PIPA ERROR MONITOR CALIB)
12 TO K627 (Y PIPA ERROR MONITOR CALIB)
13 TO K628 (Z PIPA ERROR MONITOR CALIB)
14 (X PIPA FAIL TEST)
15 (Y PIPA FAIL TEST)
16 (Z PIPA FAIL TEST)
17 TO K625 (AGC FAIL TEST)
18 TO K637 (AGC SPARE FAIL TEST)
19 TO K624 (AGC PWR FAIL CALIB)
ENCODER ZERO TO NAA 6V, 400~
127
AGC SPARE TO NAA 6V, 400~
126
DB-344
AGC PWR SUPPLY FAIL (PSA) HI
10
PC-G
6V 400~ HI
17
PC-
6V 400~ LO
16
DB-345
AGC PWR SUPPLY FAIL (PSA) LO
11
DB-346
AGC SPARE (PSA)
12
DB-827
(PSA ACCEL FAILURE IND)
X PIPA ERROR OUT (PSA ACCEL FAILURE IND)
107
AGC SPARE
S602-15
K637
S602-8
S602-16
K624
S602-9
ENCODER ZEROING
27V DC
28V DC AGC PWR
K639
S602-14
K625
S602-10
LV
FIC
8
7 27V
6
5 REC
ACCEL FAIL
K601
4
1
2
3
27V
CDU FAIL
K602
27V
AGC PWR FAIL
K604
111
110
108
107
105
128
13
14
40
DB-339
ACCEL FAIL (AGC)
ACCEL FAIL (NAA)
DB-340
CDU FAIL (AGC)
CDU FAIL (NAA)
AGC PWR FAIL (NAA)
DB-302
ENCODER ZERO AGC LO
DB-347
AGC FAIL (PSA)
DB-348
28VDC TO COMPUTER RELAY (AGC)
DB-831
(PSA ACCEL FAILURE IND)
1900089
INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

| REVISIONS | | | | |
|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | DATE | APPD |
| 6 C | | THIS SHT ADDED PER TDRR 03396 | 4/26/63 | JJM |
| D | | REPLACED WITH CHANGE BY REV. E PER MXC 190584 PER TDRR 04717 | 25 OCT 63 | J.J.M. N.N |

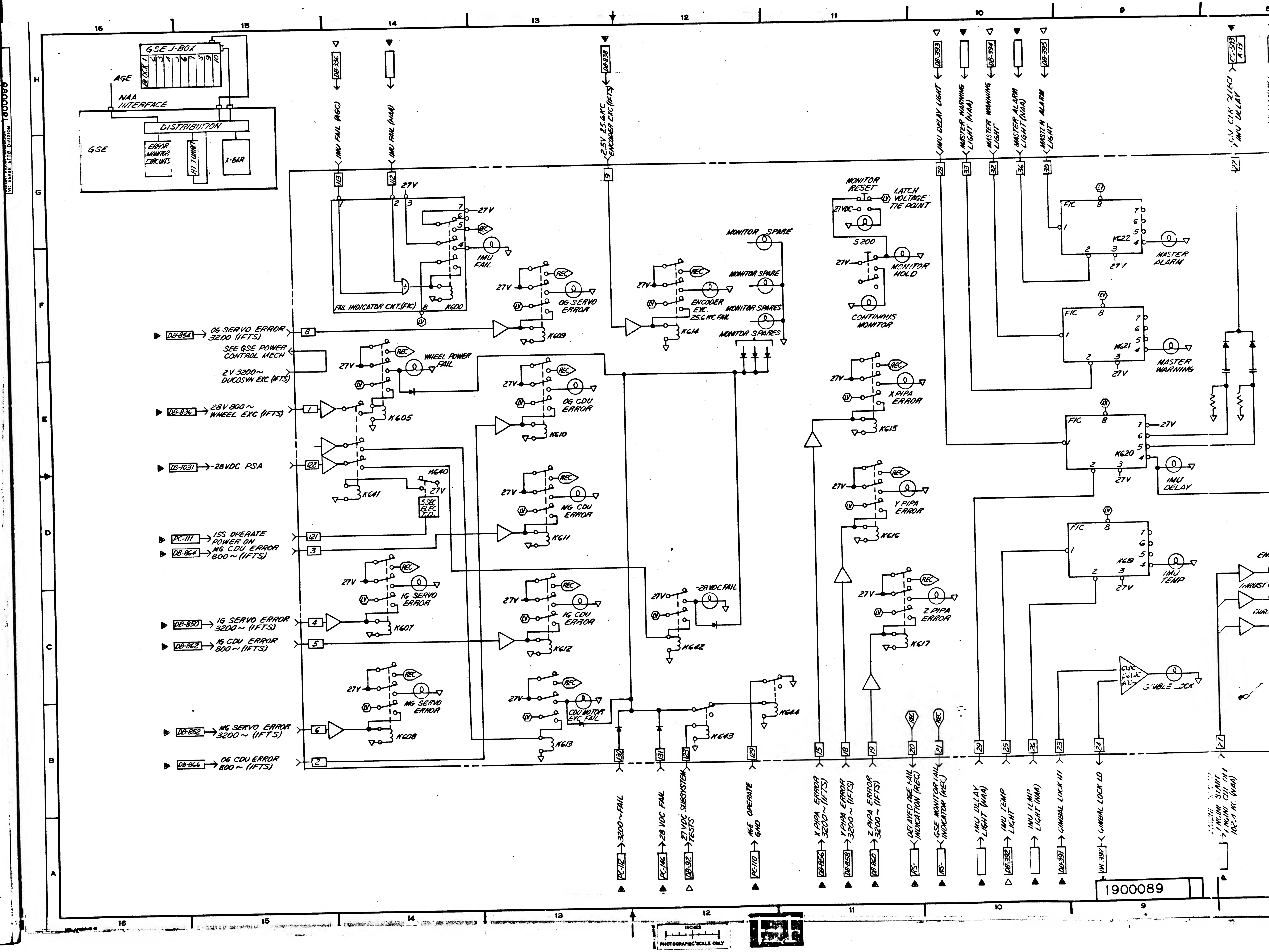
# FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 01467 DATE 5 JUNE 63

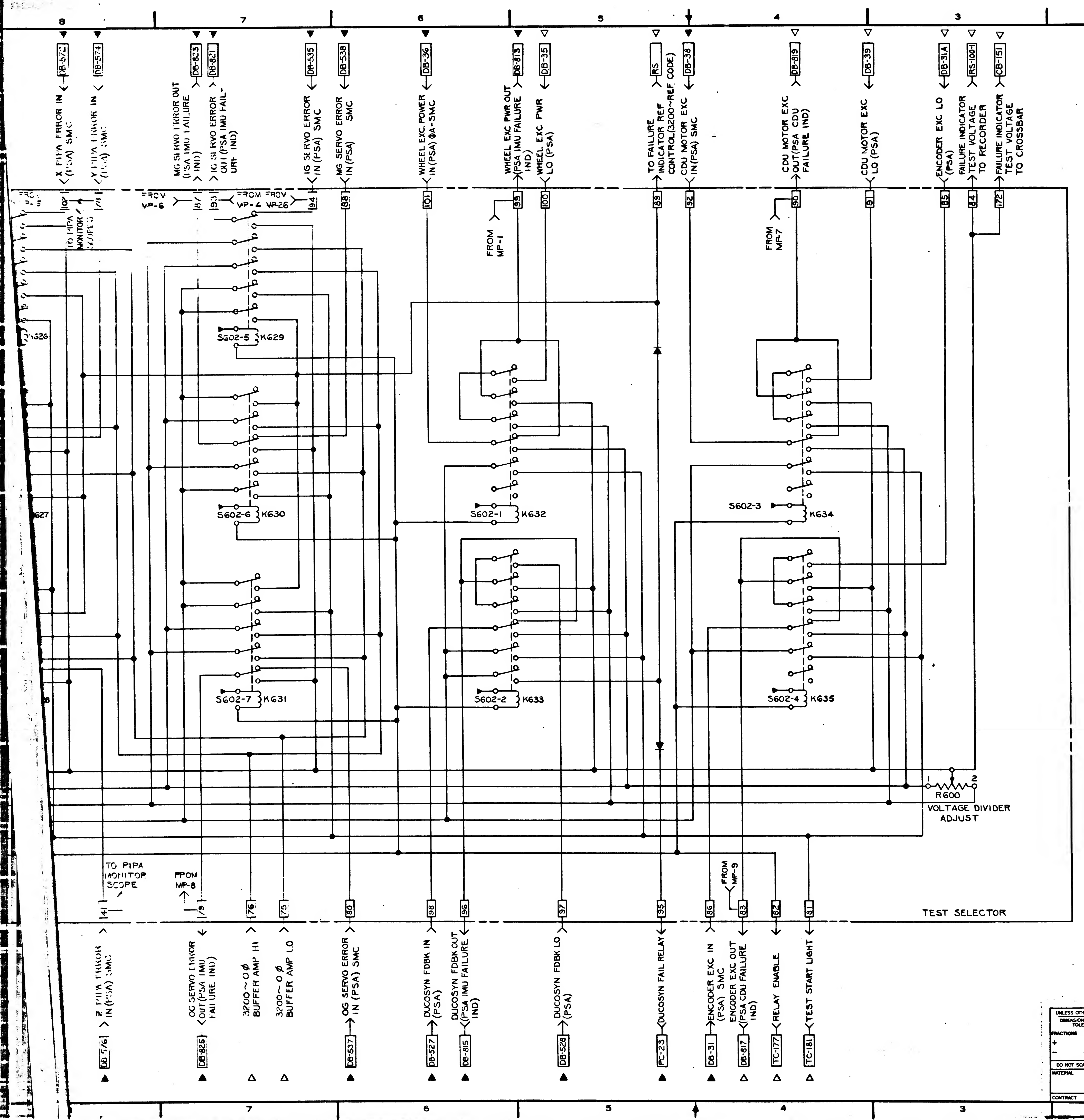
Ⓓ REPLACED WITH CHANGE BY REV E
PER MXC 190584



| CODE IDENT NO. | SIZE | |
|---|---|---|
| 99974 | J₂ | 1900089 |
| SCALE —— | | SHEET 2 |


GSE J-BOX
BLOCK 1 2 3 4 5 6 7 8 9 10
AGE
NAA INTERFACE
DISTRIBUTION
GSE
ERROR MONITOR CIRCUITS
H.T. UNIT
X-BAR
DB-336
IMU FAIL (AGC)
IMU FAIL (NAA)
DB-838
2.5V 25.6KC ENCODER EXC (IFTS)
DB-393
IMU DELAY LIGHT
MASTER WARNING LIGHT (NAA)
DB-394
MASTER WARNING LIGHT
MASTER ALARM LIGHT (NAA)
DB-395
MASTER ALARM LIGHT
CS-503 A-13
27V
IMU FAIL
FAIL INDICATOR CKT. (FIC)
K600
REC
LV
OG SERVO ERROR
K609
ENCODER EXC. 25.6 KC FAIL
K614
MONITOR SPARE
MONITOR SPARES
MONITOR RESET
LATCH VOLTAGE TIE POINT
27VDC
S200
MONITOR HOLD
CONTINOUS MONITOR
FIC
K622
MASTER ALARM
K621
MASTER WARNING
DB-854
OG SERVO ERROR 3200 (IFTS)
SEE GSE POWER CONTROL MECH
2V 3200~ DUCOSYN EXC (IFTS)
WHEEL POWER FAIL
K605
OG CDU ERROR
K610
X PIPA ERROR
K615
K620
IMU DELAY
DB-836
28V 800~ WHEEL EXC (IFTS)
DS-1031
-28VDC PSA
K640
K641
5 SEC ELEC T.D.
MG CDU ERROR
K611
Y PIPA ERROR
K616
PC-111
ISS OPERATE POWER ON
DB-864
MG CDU ERROR 800~ (IFTS)
K619
IMU TEMP
IG SERVO ERROR
K607
IG CDU ERROR
K612
-28 VDC FAIL
K642
Z PIPA ERROR
K617
DB-850
IG SERVO ERROR 3200~ (IFTS)
DB-862
IG CDU ERROR 800~ (IFTS)
GIMBLE LOCK
MG SERVO ERROR
K608
CDU MOTOR EXC FAIL
K613
K643
K644
DB-852
MG SERVO ERROR 3200~ (IFTS)
DB-866
OG CDU ERROR 800~ (IFTS)
PC-112
3200~ FAIL
PC-146
28 VDC FAIL
DB-92
27 VDC SUBSYSTEM TESTS
PC-110
AGE OPERATE GND
DB-856
X PIPA ERROR 3200~ (IFTS)
DB-858
Y PIPA ERROR 3200~ (IFTS)
DB-860
Z PIPA ERROR 3200~ (IFTS)
RS-
DELAYED AGE FAIL INDICATION (REC)
GSE MONITOR FAIL INDICATOR (REC)
IMU DELAY LIGHT (NAA)
DB-392
IMU TEMP LIGHT
IMU TEMP LIGHT (NAA)
DB-391
GIMBAL LOCK HI
DB-397
GIMBAL LOCK LO
1900089
16 15 14 13 12 11 10 9
H G F E D C B A
PHOTOGRAPHIC SCALE ONLY
INCHES

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| E | | REPLACES REV. D WITH CHANGE PER MXC 190584 REVISED PER TDR #4717 | | 25 OCT 63 | J.J.M. / W.N. |
| | | | | NOV 63 | |



**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01467 DATE 5 JUNE 63

COORDINATE WITH 1900065 FOR GROUNDING & SIGNAL ISOLATION REQUIREMENTS

▷ SUBSYSTEM TESTING
▶ SYSTEM TESTING
▶ SUBSYSTEM & SYSTEM TESTING
DB - DISTRIBUTION BLOCK
TC - TEST CONTROL
RS - RECORDER SELECT
PC - POWER CONTROL
SS - SIGNAL SELECT
CS - COUNTER SELECT
CB - CROSS BAR

| E | E |
|---|---|
| SHEET 1 | SHEET 2 |

REVISION STATUS OF SHEETS

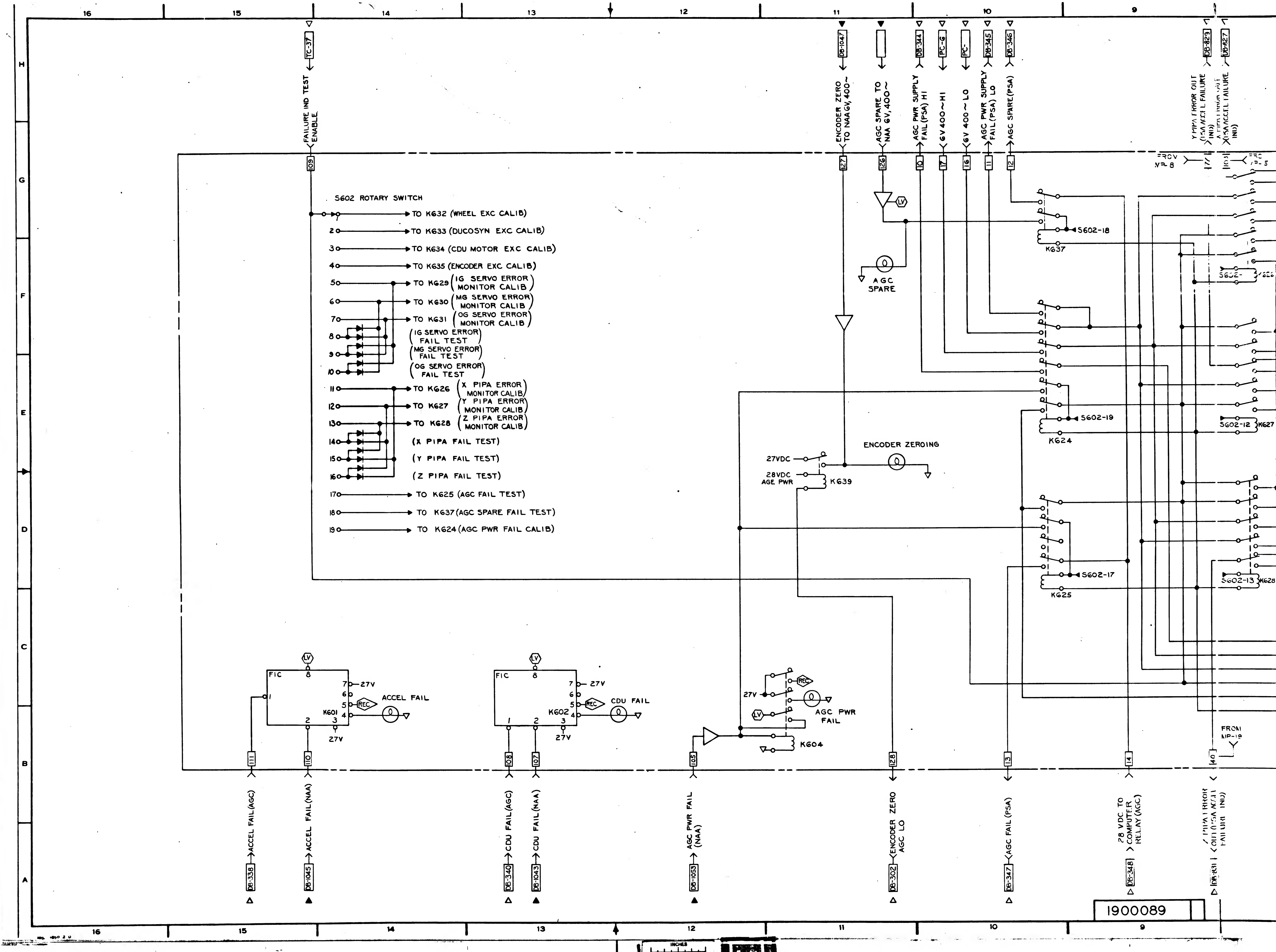
Ⓔ REPLACES REV "D" WITH CHANGE PER MXC 190584

| | | |
|---|---|---|
| UNLESS OTHERWISE SPECIFIED<br>DIMENSIONS ARE IN INCHES<br>TOLERANCES ON<br>FRACTIONS + − DECIMALS + − ANGLES + − | AC SPARK PLUG DIVISION, GMC<br>MILWAUKEE, WISCONSIN | MANNED SPACECRAFT CENTER<br>HOUSTON, TEXAS |
| | ACSP PN | |
| DO NOT SCALE THIS DRAWING | DRAWN R.A. ROZWADOWSKI DATE 17 MAY 63<br>CHECKED G. VARISH 27 MAY 63<br>APPROVAL J. TRIGGS 27 MAY 63<br>APPROVAL 11-18-63 | MECHANIZATION DIAGRAM - GSE SYSTEM & SUBSYSTEM MONITOR - DISPLAY & CONTROLS |
| MATERIAL | NASA APPROVAL | CODE IDENT NO. 99974 SIZE J2 1900089 |
| CONTRACT | MIT APPROVAL | SCALE — SHEET 1 OF 2 |

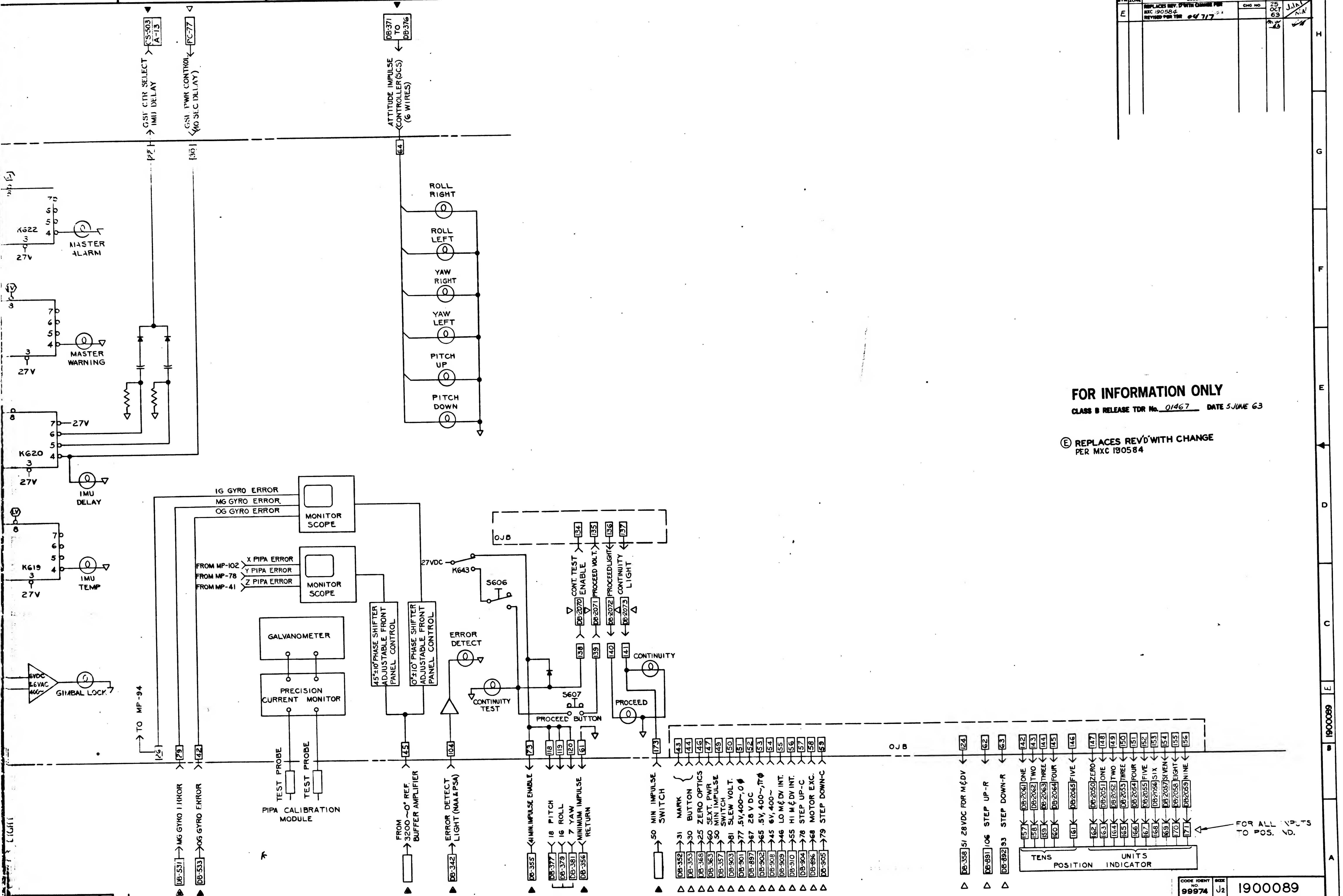
1900089

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

F3


16
15
14
13
12
11
10
9
H
G
F
E
D
C
B
A
TC-37
FAILURE IND TEST ENABLE
109
DB-1047
ENCODER ZERO TO NAA GV, 400~
127
AGC SPARE TO NAA GV, 400~
126
DB-344
AGC PWR SUPPLY FAIL (PSA) HI
10
PC-G
GV 400~ HI
17
PC-
GV 400~ LO
16
DB-345
AGC PWR SUPPLY FAIL (PSA) LO
11
DB-346
AGC SPARE (PSA)
12
DB-829
Y PIPA ERROR OUT (PSA ACCEL FAILURE IND)
DB-827
X PIPA ERROR OUT (PSA ACCEL FAILURE IND)
FROM MP-8
171
103
FROM MP-5
S602 ROTARY SWITCH
1 TO K632 (WHEEL EXC CALIB)
2 TO K633 (DUCOSYN EXC CALIB)
3 TO K634 (CDU MOTOR EXC CALIB)
4 TO K635 (ENCODER EXC CALIB)
5 TO K629 (IG SERVO ERROR MONITOR CALIB)
6 TO K630 (MG SERVO ERROR MONITOR CALIB)
7 TO K631 (OG SERVO ERROR MONITOR CALIB)
8 (IG SERVO ERROR FAIL TEST)
9 (MG SERVO ERROR FAIL TEST)
10 (OG SERVO ERROR FAIL TEST)
11 TO K626 (X PIPA ERROR MONITOR CALIB)
12 TO K627 (Y PIPA ERROR MONITOR CALIB)
13 TO K628 (Z PIPA ERROR MONITOR CALIB)
14 (X PIPA FAIL TEST)
15 (Y PIPA FAIL TEST)
16 (Z PIPA FAIL TEST)
17 TO K625 (AGC FAIL TEST)
18 TO K637 (AGC SPARE FAIL TEST)
19 TO K624 (AGC PWR FAIL CALIB)
LV
AGC SPARE
S602-18
K637
S602-
K626
S602-19
S602-12
K627
K624
ENCODER ZEROING
27VDC
28VDC AGE PWR
K639
S602-17
S602-13
K628
K625
FIC
8
7 27V
6
5 REC
4
1
2
3
27V
K601
ACCEL FAIL
K602
CDU FAIL
27V
REC
AGC PWR FAIL
K604
FROM MP-19
111
110
108
107
105
128
13
14
140
DB-338 ACCEL FAIL (AGC)
DB-1045 ACCEL FAIL (NAA)
DB-340 CDU FAIL (AGC)
DB-1043 CDU FAIL (NAA)
DB-1053 AGC PWR FAIL (NAA)
DB-302 ENCODER ZERO AGC LO
DB-347 AGC FAIL (PSA)
DB-348 28 VDC TO COMPUTER RELAY (AGC)
DB-831 Z PIPA ERROR OUT (PSA ACCEL FAILURE IND)
1900089
INCHES
PHOTOGRAPHIC SCALE ONLY

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| E | | REPLACES REV. D WITH CHANGE PER MXC 190584<br>REVISED PER TDR 04717 | | 25 OCT 63 | J.J.N. / N.N. |



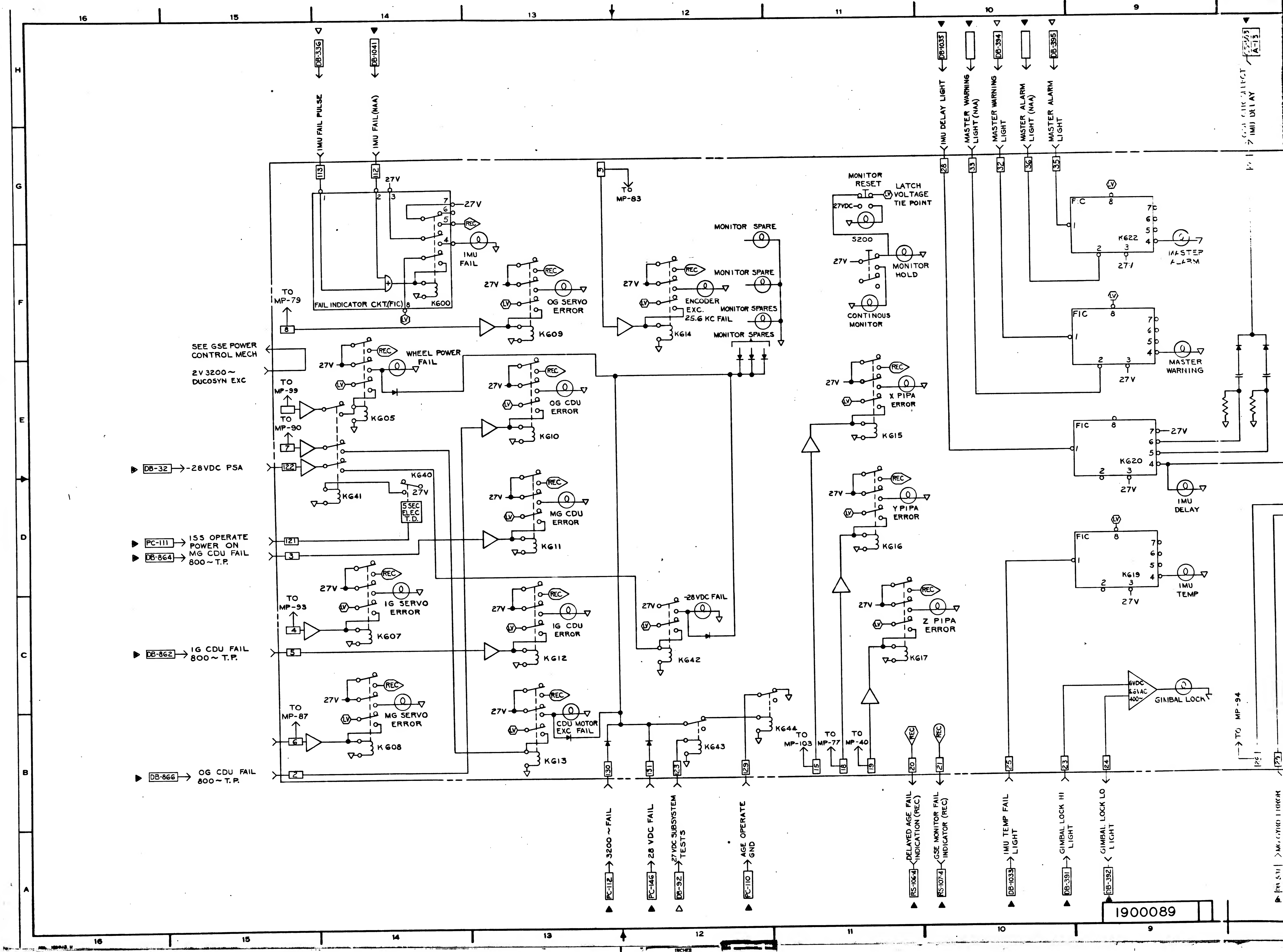
**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01467 DATE 5 JUNE 63

Ⓔ REPLACES REV'D' WITH CHANGE PER MXC 190584

| CODE IDENT NO. | SIZE | |
|---|---|---|
| 99974 | J2 | 1900089 |
| SCALE — | | SHEET 2 OF |

1900089


16
15
14
13
12
11
10
9
H
G
F
E
D
C
B
A
DB-336
DB-1041
IMU FAIL PULSE
IMU FAIL (NAA)
113
112
27V
FAIL INDICATOR CKT.(FIC)
K600
IMU FAIL
REC
LV
TO MP-79
SEE GSE POWER CONTROL MECH
2V 3200~ DUCOSYN EXC
TO MP-99
TO MP-90
DB-32
-28VDC PSA
122
K605
K640
K641
5 SEC ELEC T.D.
WHEEL POWER FAIL
PC-111
ISS OPERATE POWER ON
DB-864
MG CDU FAIL 800~ T.P.
121
TO MP-93
IG SERVO ERROR
K607
DB-862
IG CDU FAIL 800~ T.P.
TO MP-87
MG SERVO ERROR
K608
DB-866
OG CDU FAIL 800~ T.P.
OG SERVO ERROR
K609
OG CDU ERROR
K610
MG CDU ERROR
K611
IG CDU ERROR
K612
CDU MOTOR EXC FAIL
K613
TO MP-83
ENCODER EXC. 25.6 KC FAIL
K614
MONITOR SPARE
MONITOR SPARES
-28VDC FAIL
K642
K643
K644
TO MP-103
TO MP-77
TO MP-40
MONITOR RESET
LATCH VOLTAGE TIE POINT
27VDC
S200
MONITOR HOLD
CONTINOUS MONITOR
X PIPA ERROR
K615
Y PIPA ERROR
K616
Z PIPA ERROR
K617
DB-1035
DB-394
DB-395
IMU DELAY LIGHT
MASTER WARNING LIGHT (NAA)
MASTER WARNING LIGHT
MASTER ALARM LIGHT (NAA)
MASTER ALARM LIGHT
FIC
K622
MASTER ALARM
MASTER WARNING
K620
IMU DELAY
K619
IMU TEMP
6VDC & 6VAC 400~
GIMBAL LOCK
TO MP-94
PC-112
3200~ FAIL
PC-146
28 VDC FAIL
DB-92
27VDC SUBSYSTEM TESTS
PC-110
AGE OPERATE GND
RS-106-4
DELAYED AGE FAIL INDICATION (REC)
RS-107-4
GSE MONITOR FAIL INDICATOR (REC)
DB-1033
IMU TEMP FAIL LIGHT
DB-391
GIMBAL LOCK HI LIGHT
DB-392
GIMBAL LOCK LO LIGHT
IMU DELAY
INCHES
PHOTOGRAPHIC SCALE ONLY

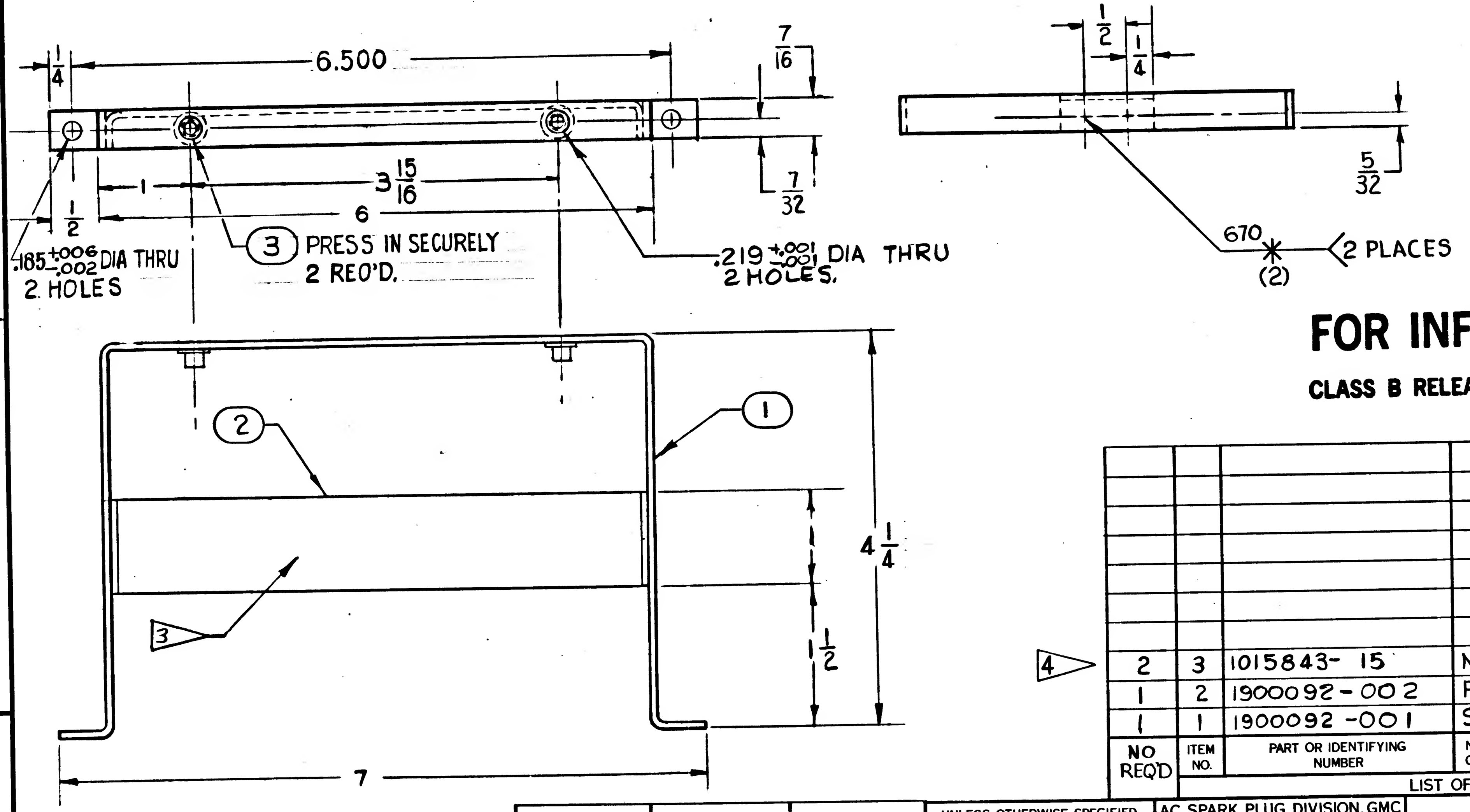
1900089

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.
UNLESS OTHERWISE SPECIFIED:
ALL INTERNAL BEND RADII $\frac{1}{16}$.

1 ▷ MATERIAL: .063 THK AL ALY PER QQ-A-318, TEMPER H-32. (ES 2105)
2 ▷ FINISH: CHEM FILM PER MIL-C-5541 (ES-591)
WELD PER MIL-W-6858 CLASS B (ES-2513)
3 ▷ IDENTIFY USING DRAWING NO. & REVISION LETTER AT THE INDICATED LOCATION PER MIL-STD-130 (ES 267)

4 ▷ VENDOR ITEM - SEE SPEC CONTROL DRAWING.



**FOR INFORMATION ONLY**

**CLASS B RELEASE TDR No.** 01471 **DATE** 5 Jun 63

| NO REQ'D | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|
| 2 | 3 | 1015843- 15 | NUT, SELF-LOCKING, SPLINE. 4 ▷ |
| 1 | 2 | 1900092 - 002 | PLATE, STIFFENER 1 ▷ 2 ▷ |
| 1 | 1 | 1900092 - 001 | SUPPORT, HARNESS. 1 ▷ 2 ▷ |

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900052-011 | 1900004 | |

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

| FRACTIONS | DECIMALS | ANGLES |
|---|---|---|
| +1/64 | +.005 | + — |
| -1/64 | -.005 | — — |

DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R. Turner DATE 5 MAY 63
CHECKED Ed Foster 16 MAY 63
APPROVAL A. Smith 17 MAY 63
APPROVAL A. Kodel 17 MAY 63
NASA APPROVAL 6/5/63
L. Gedeman 6/4/63
MIT APPROVAL 5 June 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

SUPPORT, HARNESS
(INSEPARABLE ASSEMBLY)

CODE IDENT NO.
SIZE C
1900092
SCALE FULL
SHEET 1 OF 1

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

| APPLICATION | |
|---|---|
| NEXT ASSY | USED ON |
| 1900052-011 | 1900052-011 |

| REVISIONS | | | |
|---|---|---|---|
| SYM | DESCRIPTION | DATE | APPROVAL |
| A | CHANGE IN ACCORDANCE WITH MXC 190756 TDRR 09712 | 25 OCT 63 | WSM<br>PM |
| B | CHANGE IN ACCORDANCE WITH MXC 191671 TDRR 09713 | 21 NOV 63 | EL<br>PM |
| C | CHANGE IN ACCORDANCE WITH CM 196233 TDRR 09714 | 21 MAY 64 | EM<br>W.D. |

# FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 03897 DATE 10/15/63

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| REV | C | C | C | | | | | | | | | | | | | | | | | | | | |
| SHEET | 24 | 25 | 26 | | | | | | | | | | | | | | | | | | | | |
| REV STATUS OF SHEETS REV | C | C | C | C | C | C | C | C | C | C | C | C | C | C | C | C | C | C | C | C | C | C | C |
| SHEET | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

ACSP PN

DRAWN S. Agne DATE 21 AUG 63
CHECKED M. MANNING 19 SEP 63
APPROVAL D. Williams 19 SEP 63
APPROVAL C. Johnson 10/11/63
NASA APPROVAL 10/15/63
MIT APPROVAL 15 Oct

## WIRING HARNESS A

CODE IDENT NO.
SIZE
1900094
REV C
CONTRACT
SCALE
SHEET 1 OF 26

---

PENNANT NOTE — GENERAL NOTES

| PENNANT NOTE | GENERAL NOTES |
|---|---|
| 1 | SEE CONDUCTOR CHART. PENNANT NOTE 1. |
| 2 | SEE CONDUCTOR CHART. PENNANT NOTE 2. |
| 3 | MARK CONDUCTOR IDENTIFICATION PER ND1002019. |
| 4 | SPACING OF CONDUCTOR IDENTIFICATION SHALL BE EVERY 1.2 INCHES. |
| 5 | SPIRALLING OF THE MARKING IS ALLOWED. |
| 6 | LACE HARNESS USING ITEM 15. |
| 7 | IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (ES-267). |
| 8 | SOLDER PER MIL-STD-440 USING ITEMS 12 AND 13. |
| 9 | Y OR N IN TINNED COLUMN INDICATES YES OR NO. |
| 10 | A LETTER WITH AN ASTERISK SUFFIX. INDICATES A LOWER CASE LETTER. |
| 11 | GRID MODULE IS 1 INCH. |
| 12 | VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING. |
| 13 | INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327. |
| 14 | FASTEN MARKER SECURELY WITH ITEM 15. WRAP MARKER TO CONFORM TO CABLE CONFIGURATION. |
| 15 | UNLESS OTHERWISE SPECIFIED --- FEATURE CENTERLINES ARE LOCATED WITHIN + OR - .25 INCH. END OF HOOKUP WIRES OR ACESSORIES ARE LOCATED WITHIN + OR - .12 INCH. |

---

PENNANT NOTE — GENERAL NOTES

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

| APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD. | TOLERANCE | | | | |
|---|---|---|---|---|---|
| | WIRE OR CABLE | STRIP WIRE | STRIP JACKET | CUT WIRE | CUT SHIELD |
| UNDER 1 INCH | + .06-.00 | +.03-.00 | +.06-.06 | +.06-.06 | +.06-.06 |
| 1 INCH TO 6 INCHES | + .50-.00 | +.06-.00 | +.25-.25 | +.25-.25 | +.25-.25 |
| 6 INCHES TO 6 FEET | +1.00-.00 | | +.50-.50 | +.50-.50 | +.50-.50 |
| OVER 6 FEET | +2.00-.00 | | | | |

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PENNANT — LIST OF MATERIALS

| NOTE | ITEM | QTY | PART NO | DESCRIPTION |
|---|---|---|---|---|
| | 1 | 1 | 1900094-001 | WIRE PER ND1002181 TYPE 1, CLASS 1, 20AWG, WHT, 8.5 FT TOTAL LENGTH |
| | 2 | 1 | 1900094-002 | WIRE PER ND1002181 TYPE 1, CLASS 1, 24AWG, WHT, 561 FT TOTAL LENGTH |
| | 3 | 1 | MS-3127E-16-8PW | (1897049-081) CONNECTOR, RECEPTACLE |
| | 4 | 1 | MS-3127E-24-61P | (1897055-610) CONNECTOR, RECEPTACLE |
| | 5 | 1 | MS-3127E-24-61PW | (1897055-611) CONNECTOR, RECEPTACLE |
| | 6 | 1 | MS-3127E-24-61PX | (1897055-612) CONNECTOR, RECEPTACLE |
| | 7 | 1 | MS-3126F-16-8S | (1897042-080) CONNECTOR, PLUG |
| | 8 | 1 | MS-3127E-20-41S | (1897052-410) CONNECTOR, RECEPTACLE |
| | 9 | 1 | MS-3127E-22-55S | (1897054-550) CONNECTOR, RECEPTACLE |
| | 10 | 1 | MS35431-4 | TERMINAL LUG |
| 12 | 11 | 488 | 1015949-002 | TERMINAL PIN |
| | 12 | AR | QQ-S-571 | SOLDER SN60 (ES-2175 ALLOY 1) |
| | 13 | AR | QQ-S-571 | FLUX MIL-F-14256 (ES-2798) OR FLUX TYPE AR (ES-2175 TYPE 1 OR 2) |
| 12 | 14 | 1 | 1016128-001 | BAND-IDENTIFICATION |
| | 15 | AR | MIL-T-713 | LACING TAPE TYPE P, CLASS 2 BLACK (ES-2732 NO. 18) |

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | 2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | FROM TERMINATION SPEC. 1 ITEM NO. | FROM NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TO TERMINATION SPEC 1 ITEM NO. | TO NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 1 | 1 | | J1-A | 30 | N | | 1 | E1 | 30 | Y | | 8 |
| A 2 | 2 | | J1-C | 30 | N | | 1 | K3-B | 16 | N | 11 | 9 |
| A 3 | 1 | | J1-D | 30 | N | | 1 | P1-D | 30 | N | | 5 |
| A 4 | 1 | | J1-E | 30 | N | | 1 | P1-E | 30 | N | | 5 |
| A 5 | 2 | | J1-F | 30 | N | | 1 | K3-A | 16 | N | 11 | 9 |
| A 6 | 2 | | J1-G | 30 | N | | 1 | K8-A | 16 | N | 11 | 16 |
| A 7 | 2 | | J1-H | 30 | N | | 1 | K15-A | 16 | N | 11 | 13 |
| A 8 | 2 | | J2-A | 30 | N | | 2 | K1- 2 | 16 | N | 11 | 29 |
| A 9 | 2 | | J2-B | 30 | N | | 2 | K1- 4 | 16 | N | 11 | 29 |
| A 10 | 2 | | J2-S | 30 | N | | 2 | K2-22 | 16 | N | 11 | 18 |
| A 11 | 2 | | J2-T | 30 | N | | 2 | K2-24 | 16 | N | 11 | 18 |
| A 12 | 2 | | J2-C | 30 | N | | 2 | K1-20 | 16 | N | 11 | 29 |
| A 13 | 2 | | J2-D | 30 | N | | 2 | K1-22 | 16 | N | 11 | 29 |
| A 14 | 2 | | J2-E | 30 | N | | 2 | K1-24 | 16 | N | 11 | 29 |
| A 15 | 2 | | J2-F | 30 | N | | 2 | K2- 2 | 16 | N | 11 | 19 |
| A 16 | 2 | | J2-G | 30 | N | | 2 | K2- 4 | 16 | N | 11 | 19 |
| A 17 | 2 | | J2-H | 30 | N | | 2 | K2- 6 | 16 | N | 11 | 19 |
| A 18 | 2 | | J2-J | 30 | N | | 2 | K2- 8 | 16 | N | 11 | 19 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | 2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | FROM TERMINATION SPEC. 1 ITEM NO. | FROM NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TO TERMINATION SPEC 1 ITEM NO. | TO NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 19 | 2 | | J2-K | 30 | N | | 2 | K2-10 | 16 | N | 11 | 19 |
| A 20 | 2 | | J2-L | 30 | N | | 2 | K2-12 | 16 | N | 11 | 19 |
| A 21 | 2 | | J2-M | 30 | N | | 2 | K2-14 | 16 | N | 11 | 18 |
| A 22 | 2 | | J2-N | 30 | N | | 2 | K2-16 | 16 | N | 11 | 18 |
| A 23 | 2 | | J2-P | 30 | N | | 2 | K2-18 | 16 | N | 11 | 18 |
| A 24 | 2 | | J2-R | 30 | N | | 2 | K2-20 | 16 | N | 11 | 18 |
| A 25 | 2 | | J2-U | 30 | N | | 2 | K4-12 | 16 | N | 11 | 28 |
| A 26 | 2 | | J2-V | 30 | N | | 2 | K4-14 | 16 | N | 11 | 28 |
| A 27 | 2 | | J2-W | 30 | N | | 2 | K4-16 | 16 | N | 11 | 28 |
| A 28 | 2 | | J2-X | 30 | N | | 2 | K4-18 | 16 | N | 11 | 28 |
| A 29 | 2 | | J2-Y | 30 | N | | 2 | K4-20 | 16 | N | 11 | 28 |
| A 30 | 2 | | J2-Z | 30 | N | | 2 | K4-22 | 16 | N | 11 | 28 |
| A 31 | 2 | | J2-A* | 30 | N | | 2 | K4-24 | 16 | N | 11 | 28 |
| A 32 | 2 | | J2-B* | 30 | N | | 2 | K5- 2 | 16 | N | 11 | 20 |
| A 33 | 2 | | J2-C* | 30 | N | | 2 | K5- 4 | 16 | N | 11 | 20 |
| A 34 | 2 | | J2-D* | 30 | N | | 2 | K5- 6 | 16 | N | 11 | 20 |
| A 35 | 2 | | J2-E* | 30 | N | | 2 | K5- 8 | 16 | N | 11 | 20 |
| A 36 | 2 | | J2-F* | 30 | N | | 2 | K5-10 | 16 | N | 11 | 20 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

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| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | 2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | FROM TERMINATION SPEC. 1 ITEM NO. | FROM NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TO TERMINATION SPEC 1 ITEM NO. | TO NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 37 | 2 | | J2-G* | 30 | N | | 2 | K5-12 | 16 | N | 11 | 20 |
| A 38 | 2 | | J2-H* | 30 | N | | 2 | K5-14 | 16 | N | 11 | 17 |
| A 39 | 2 | | J2-I* | 30 | N | | 2 | K5-16 | 16 | N | 11 | 17 |
| A 40 | 2 | | J2-J* | 30 | N | | 2 | K5-18 | 16 | N | 11 | 17 |
| A 41 | 2 | | J2-K* | 30 | N | | 2 | K5-20 | 16 | N | 11 | 17 |
| A 42 | 2 | | J2-M* | 30 | N | | 2 | K5-22 | 16 | N | 11 | 17 |
| A 43 | 2 | | J2-N* | 30 | N | | 2 | K3- 4 | 16 | N | 11 | 9 |
| A 44 | 2 | | J2-P* | 30 | N | | 2 | K3-12 | 16 | N | 11 | 9 |
| A 45 | | | DELETED | | | | | | | | | |
| A 46 | 2 | | J2-R* | 30 | N | | 2 | K3-14 | 16 | N | 11 | 9 |
| A 47 | 2 | | J2-S* | 30 | N | | 2 | K3-16 | 16 | N | 11 | 9 |
| A 48 | 2 | | J2-T* | 30 | N | | 2 | K3-18 | 16 | N | 11 | 9 |
| A 49 | 2 | | J2-U* | 30 | N | | 2 | K6- 2 | 16 | N | 11 | 10 |
| A 50 | 2 | | J2-V* | 30 | N | | 2 | K6- 4 | 16 | N | 11 | 10 |
| A 51 | 2 | | J2-W* | 30 | N | | 2 | K6- 6 | 16 | N | 11 | 10 |
| A 52 | 2 | | J2-X* | 30 | N | | 2 | K6- 8 | 16 | N | 11 | 10 |
| A 53 | 2 | | J2-Y* | 30 | N | | 2 | K6-10 | 16 | N | 11 | 10 |
| A 54 | 2 | | J2-Z* | 30 | N | | 2 | K6-12 | 16 | N | 11 | 10 |

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| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | 2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | FROM TERMINATION SPEC. 1 ITEM NO. | FROM NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TO TERMINATION SPEC 1 ITEM NO. | TO NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 55 | 2 | | J2-AA | 30 | N | | 2 | K6-14 | 16 | N | 11 | 10 |
| A 56 | 2 | | J2-BB | 30 | N | | 2 | K6-16 | 16 | N | 11 | 10 |
| A 57 | 2 | | J2-CC | 30 | N | | 2 | K6-18 | 16 | N | 11 | 10 |
| A 58 | 2 | | J2-DD | 30 | N | | 2 | K6-20 | 16 | N | 11 | 10 |
| A 59 | 2 | | J2-EE | 30 | N | | 2 | K6-22 | 16 | N | 11 | 10 |
| A 60 | 2 | | J2-FF | 30 | N | | 2 | K6-24 | 16 | N | 11 | 10 |
| A 61 | 2 | | J2-GG | 30 | N | | 2 | K9- 2 | 16 | N | 11 | 11 |
| A 62 | 2 | | J2-HH | 30 | N | | 2 | K9- 4 | 16 | N | 11 | 11 |
| A 63 | 2 | | J2-JJ | 30 | N | | 2 | K9- 6 | 16 | N | 11 | 11 |
| A 64 | 2 | | J2-KK | 30 | N | | 2 | K9- 8 | 16 | N | 11 | 11 |
| A 65 | 2 | | J2-LL | 30 | N | | 2 | K9-10 | 16 | N | 11 | 11 |
| A 66 | 2 | | J2-MM | 30 | N | | 2 | K9-12 | 16 | N | 11 | 11 |
| A 67 | 2 | | J2-NN | 30 | N | | 2 | K9-14 | 16 | N | 11 | 11 |
| A 68 | 2 | | J2-PP | 30 | N | | 2 | K9-16 | 16 | N | 11 | 11 |
| A 69 | 2 | | J3-N | 30 | N | | 3 | K7- 2 | 16 | N | 11 | 27 |
| A 70 | 2 | | J3-P | 30 | N | | 3 | K7- 4 | 16 | N | 11 | 27 |
| A 71 | 2 | | K1- 6 | 16 | N | 11 | 29 | K7-20 | 16 | N | 11 | 27 |
| A 72 | 2 | | J3- 6 | 30 | N | | 3 | K7-22 | 16 | N | 11 | 27 |

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| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | FROM TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TO TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A 73 | 2 | J3-T | 30 | N | | 3 | K7-24 | 16 | N | 11 | 27 |
| A 74 | 2 | J3-U | 30 | N | | 3 | K8- 2 | 16 | N | 11 | 21 |
| A 75 | 2 | J3-V | 30 | N | | 3 | K8- 4 | 16 | N | 11 | 21 |
| A 76 | 2 | J3-W | 30 | N | | 3 | K8- 6 | 16 | N | 11 | 21 |
| A 77 | 2 | J3-X | 30 | N | | 3 | K8- 8 | 16 | N | 11 | 21 |
| A 78 | 2 | J3-Y | 30 | N | | 3 | K8-10 | 16 | N | 11 | 21 |
| A 79 | 2 | J3-Z | 30 | N | | 3 | K8-12 | 16 | N | 11 | 21 |
| A 80 | 2 | J3-A* | 30 | N | | 3 | K8-14 | 16 | N | 11 | 16 |
| A 81 | 2 | J3-B* | 30 | N | | 3 | K8-16 | 16 | N | 11 | 16 |
| A 82 | 2 | J3-C* | 30 | N | | 3 | K8-18 | 16 | N | 11 | 16 |
| A 83 | 2 | J3-D* | 30 | N | | 3 | K8-20 | 16 | N | 11 | 16 |
| A 84 | 2 | J3-E* | 30 | N | | 3 | K8-22 | 16 | N | 11 | 16 |
| A 85 | 2 | J3-F* | 30 | N | | 3 | K8-24 | 16 | N | 11 | 16 |
| A 86 | 2 | J3-G* | 30 | N | | 3 | K10- 2 | 16 | N | 11 | 26 |
| A 87 | 2 | J3-H* | 30 | N | | 3 | K10- 4 | 16 | N | 11 | 26 |
| A 88 | 2 | J3-I* | 30 | N | | 3 | K10- 6 | 16 | N | 11 | 26 |
| A 89 | 2 | J3-J* | 30 | N | | 3 | K10- 8 | 16 | N | 11 | 26 |
| A 90 | 2 | J3-K* | 30 | N | | 3 | K10-10 | 16 | N | 11 | 26 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GED WIRING HARNESS A C 1900094

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | FROM TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TO TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A 91 | 2 | J3-M* | 30 | N | | 3 | K10-12 | 16 | N | 11 | 26 |
| A 92 | 2 | J3-N* | 30 | N | | 3 | K10-18 | 16 | N | 11 | 26 |
| A 93 | 2 | J3-P* | 30 | N | | 3 | K10-20 | 16 | N | 11 | 26 |
| A 94 | 2 | J3-Q* | 30 | N | | 3 | K10-22 | 16 | N | 11 | 26 |
| A 95 | 2 | J3-R* | 30 | N | | 3 | K10-24 | 16 | N | 11 | 26 |
| A 96 | 2 | K4- 6 | 16 | N | 11 | 28 | K11-16 | 16 | N | 11 | 15 |
| A 97 | 2 | J3-T* | 30 | N | | 3 | K11-24 | 16 | N | 11 | 15 |
| A 98 | 2 | J3-U* | 30 | N | | 3 | K11-22 | 16 | N | 11 | 15 |
| A 99 | 2 | J3-V* | 30 | N | | 3 | K12- 2 | 16 | N | 11 | 12 |
| A 100 | 2 | J3-W* | 30 | N | | 3 | K12- 4 | 16 | N | 11 | 12 |
| A 101 | 2 | J3-X* | 30 | N | | 3 | K12- 6 | 16 | N | 11 | 12 |
| A 102 | 2 | J3-Y* | 30 | N | | 3 | K12-10 | 16 | N | 11 | 12 |
| A 103 | 2 | J3-Z* | 30 | N | | 3 | K12-12 | 16 | N | 11 | 12 |
| A 104 | 2 | J3-AA | 30 | N | | 3 | K12-14 | 16 | N | 11 | 12 |
| A 105 | 2 | J3-BB | 30 | N | | 3 | K12-16 | 16 | N | 11 | 12 |
| A 106 | 2 | J3-CC | 30 | N | | 3 | K12-18 | 16 | N | 11 | 12 |
| A 107 | 2 | J3-DD | 30 | N | | 3 | K12-20 | 16 | N | 11 | 12 |
| A 108 | 2 | J3-EE | 30 | N | | 3 | K12-22 | 16 | N | 11 | 12 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
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SCALE-NONE | REV LTR C | SHEET 10 OF 26

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GED WIRING HARNESS A C 1900094

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | FROM TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TO TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A 109 | 2 | J3-FF | 30 | N | | 3 | K12-24 | 16 | N | 11 | 12 |
| A 110 | 2 | J3-GG | 30 | N | | 3 | K14- 2 | 16 | N | 11 | 23 |
| A 111 | 2 | J3-HH | 30 | N | | 3 | K14- 4 | 16 | N | 11 | 23 |
| A 112 | 2 | J3-JJ | 30 | N | | 3 | K14- 6 | 16 | N | 11 | 23 |
| A 113 | 2 | J3-KK | 30 | N | | 3 | K14- 8 | 16 | N | 11 | 23 |
| A 114 | 2 | J3-LL | 30 | N | | 3 | K14-10 | 16 | N | 11 | 23 |
| A 115 | 2 | J3-MM | 30 | N | | 3 | K14-12 | 16 | N | 11 | 23 |
| A 116 | 2 | J3-NN | 30 | N | | 3 | K14-14 | 16 | N | 11 | 14 |
| A 117 | 2 | J3-PP | 30 | N | | 3 | K14-16 | 16 | N | 11 | 14 |
| A 118 | 2 | J4-A | 30 | N | | 4 | K9-18 | 16 | N | 11 | 11 |
| A 119 | 2 | J4-B | 30 | N | | 4 | K9-20 | 16 | N | 11 | 11 |
| A 120 | 2 | J4-C | 30 | N | | 4 | K9-22 | 16 | N | 11 | 11 |
| A 121 | 2 | J4-D | 30 | N | | 4 | K9-24 | 16 | N | 11 | 11 |
| A 122 | 2 | J4-S* | 30 | N | | 4 | K15- 2 | 16 | N | 11 | 13 |
| A 123 | 2 | J4-T* | 30 | N | | 4 | K15- 4 | 16 | N | 11 | 13 |
| A 124 | 2 | J4-U* | 30 | N | | 4 | K15- 6 | 16 | N | 11 | 13 |
| A 125 | 2 | J4-V* | 30 | N | | 4 | K15-10 | 16 | N | 11 | 13 |
| A 126 | 2 | J4-W* | 30 | N | | 4 | K15-12 | 16 | N | 11 | 13 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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SCALE-NONE | REV LTR C | SHEET 11 OF 26

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GED WIRING HARNESS A C 1900094

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | FROM TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TO TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A 127 | 2 | J4-X* | 30 | N | | 4 | K15-14 | 16 | N | 11 | 13 |
| A 128 | 2 | J4-Y* | 30 | N | | 4 | K15-18 | 16 | N | 11 | 13 |
| A 129 | 2 | J4-AA | 30 | N | | 4 | K15-22 | 16 | N | 11 | 13 |
| A 130 | 2 | J4-BB | 30 | N | | 4 | K13- 2 | 16 | N | 11 | 25 |
| A 131 | 2 | J4-CC | 30 | N | | 4 | K13- 4 | 16 | N | 11 | 25 |
| A 132 | 2 | J4-DD | 30 | N | | 4 | K13- 6 | 16 | N | 11 | 25 |
| A 133 | 2 | J4-EE | 30 | N | | 4 | K13-10 | 16 | N | 11 | 25 |
| A 134 | 2 | J4-FF | 30 | N | | 4 | K13-12 | 16 | N | 11 | 25 |
| A 135 | 2 | J4-GG | 30 | N | | 4 | K13-14 | 16 | N | 11 | 25 |
| A 136 | 2 | J4-HH | 30 | N | | 4 | K13-18 | 16 | N | 11 | 25 |
| A 137 | 2 | J4-JJ | 30 | N | | 4 | K13-20 | 16 | N | 11 | 25 |
| A 138 | 2 | J4-KK | 30 | N | | 4 | K13-22 | 16 | N | 11 | 25 |
| A 139 | 2 | J4-LL | 30 | N | | 4 | K16-14 | 16 | N | 11 | 24 |
| A 140 | 2 | J4-MM | 30 | N | | 4 | K16-16 | 16 | N | 11 | 24 |
| A 141 | 2 | J4-Z* | 30 | N | | 4 | K15-20 | 16 | N | 11 | 13 |
| A 142 | 2 | J4-NN | 30 | N | | 4 | K16-18 | 16 | N | 11 | 24 |
| A 143 | 2 | J4-PP | 30 | N | | 4 | K16-20 | 16 | N | 11 | 24 |
| A 144 | 2 | J5-A | 30 | N | | 7 | K1- 1 | 16 | N | 11 | 29 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR | | | FROM | | | | | | TO | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | INDIVIDUAL LENGTH ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 145 | 2 | | J5-B | 30 | N | | | 7 | K1- 3 | 16 | N | | 11 | 29 |
| A 146 | 2 | | J5-C | 30 | N | | | 7 | K1- 5 | 16 | N | | 11 | 29 |
| A 147 | 2 | | J5-D | 30 | N | | | 7 | K1- 7 | 16 | N | | 11 | 29 |
| A 148 | 2 | | J5-E | 30 | N | | | 7 | K1- 9 | 16 | N | | 11 | 29 |
| A 149 | 2 | | J5-F | 30 | N | | | 7 | K1-11 | 16 | N | | 11 | 29 |
| A 150 | 2 | | J5-G | 30 | N | | | 7 | K1-13 | 16 | N | | 11 | 29 |
| A 151 | 2 | | J5-H | 30 | N | | | 7 | K1-15 | 16 | N | | 11 | 29 |
| A 152 | 2 | | J5-J | 30 | N | | | 7 | K1-17 | 16 | N | | 11 | 29 |
| A 153 | 2 | | J5-K | 30 | N | | | 7 | K10-11 | 16 | N | | 11 | 26 |
| A 154 | 2 | | J5-L | 30 | N | | | 7 | K1-19 | 16 | N | | 11 | 29 |
| A 155 | 2 | | J5-M | 30 | N | | | 7 | K1-21 | 16 | N | | 11 | 29 |
| A 156 | 2 | | J5-N | 30 | N | | | 7 | K1-23 | 16 | N | | 11 | 29 |
| A 157 | 2 | | J5-P | 30 | N | | | 7 | K2- 1 | 16 | N | | 11 | 19 |
| A 158 | 2 | | J5-R | 30 | N | | | 7 | K2- 3 | 16 | N | | 11 | 19 |
| A 159 | 2 | | J5-S | 30 | N | | | 7 | K2- 5 | 16 | N | | 11 | 19 |
| A 160 | 2 | | J5-T | 30 | N | | | 7 | K2- 7 | 16 | N | | 11 | 19 |
| A 161 | 2 | | J5-U | 30 | N | | | 7 | K2- 9 | 16 | N | | 11 | 19 |
| A 162 | 2 | | J5-V | 30 | N | | | 7 | K2-11 | 16 | N | | 11 | 19 |

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| CONDUCTOR | | | FROM | | | | | | TO | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | INDIVIDUAL LENGTH ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 163 | 2 | | J5-W | 30 | N | | | 7 | K2-13 | 16 | N | | 11 | 18 |
| A 164 | 2 | | J5-X | 30 | N | | | 7 | K10-13 | 16 | N | | 11 | 26 |
| A 165 | 2 | | J5-Y | 30 | N | | | 7 | K2-15 | 16 | N | | 11 | 18 |
| A 166 | 2 | | J5-Z | 30 | N | | | 7 | K2-17 | 16 | N | | 11 | 18 |
| A 167 | 2 | | J5-A* | 30 | N | | | 7 | K2-19 | 16 | N | | 11 | 18 |
| A 168 | 2 | | J5-B* | 30 | N | | | 7 | K2-21 | 16 | N | | 11 | 18 |
| A 169 | 2 | | J5-C* | 30 | N | | | 7 | K2-23 | 16 | N | | 11 | 18 |
| A 170 | 2 | | J5-D* | 30 | N | | | 7 | K4- 1 | 16 | N | | 11 | 28 |
| A 171 | 2 | | J5-E* | 30 | N | | | 7 | K4- 3 | 16 | N | | 11 | 28 |
| A 172 | 2 | | J5-F* | 30 | N | | | 7 | K4- 5 | 16 | N | | 11 | 28 |
| A 173 | 2 | | J5-G* | 30 | N | | | 7 | K4- 7 | 16 | N | | 11 | 28 |
| A 174 | 2 | | J5-H* | 30 | N | | | 7 | K4- 9 | 16 | N | | 11 | 28 |
| A 175 | 2 | | J5-I* | 30 | N | | | 7 | K10-15 | 16 | N | | 11 | 26 |
| A 176 | 2 | | J5-J* | 30 | N | | | 7 | K4-11 | 16 | N | | 11 | 28 |
| A 177 | 2 | | J5-K* | 30 | N | | | 7 | K4-13 | 16 | N | | 11 | 28 |
| A 178 | 2 | | J5-M* | 30 | N | | | 7 | K4-15 | 16 | N | | 11 | 28 |
| A 179 | 2 | | J5-N* | 30 | N | | | 7 | K4-17 | 16 | N | | 11 | 28 |
| A 180 | 2 | | J5-P* | 30 | N | | | 7 | K4-19 | 16 | N | | 11 | 28 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
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| CONDUCTOR | | | FROM | | | | | | TO | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | INDIVIDUAL LENGTH ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 181 | 2 | | J5-Q* | 30 | N | | | 7 | K4-21 | 16 | N | | 11 | 28 |
| A 182 | 2 | | J5-R* | 30 | N | | | 7 | K4-23 | 16 | N | | 11 | 28 |
| A 183 | 2 | | J5-S* | 30 | N | | | 7 | K5- 1 | 16 | N | | 11 | 20 |
| A 184 | 2 | | J5-T* | 30 | N | | | 7 | K5- 3 | 16 | N | | 11 | 20 |
| A 185 | 2 | | J5-U* | 30 | N | | | 7 | K5- 5 | 16 | N | | 11 | 20 |
| A 186 | 2 | | J5-V* | 30 | N | | | 7 | K11-13 | 16 | N | | 11 | 15 |
| A 187 | 2 | | J5-W* | 30 | N | | | 7 | K5- 7 | 16 | N | | 11 | 20 |
| A 188 | 2 | | J5-X* | 30 | N | | | 7 | K5- 9 | 16 | N | | 11 | 20 |
| A 189 | 2 | | J5-Y* | 30 | N | | | 7 | K5-11 | 16 | N | | 11 | 20 |
| A 190 | 2 | | J5-Z* | 30 | N | | | 7 | K5-13 | 16 | N | | 11 | 17 |
| A 191 | 2 | | J5-AA | 30 | N | | | 7 | K5-15 | 16 | N | | 11 | 17 |
| A 192 | 2 | | J5-BB | 30 | N | | | 7 | K5-17 | 16 | N | | 11 | 17 |
| A 193 | 2 | | J5-CC | 30 | N | | | 7 | K5-19 | 16 | N | | 11 | 17 |
| A 194 | 2 | | J5-DD | 30 | N | | | 7 | K5-21 | 16 | N | | 11 | 17 |
| A 195 | 2 | | J5-EE | 30 | N | | | 7 | K5-23 | 16 | N | | 11 | 17 |
| A 196 | 2 | | J5-FF | 30 | N | | | 7 | K3- 1 | 16 | N | | 11 | 9 |
| A 197 | 2 | | J5-GG | 30 | N | | | 7 | K16- 9 | 16 | N | | 11 | 24 |
| A 198 | 2 | | J5-HH | 30 | N | | | 7 | K3- 3 | 16 | N | | 11 | 9 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GED WIRING HARNESS A C 1900094

| CONDUCTOR | | | FROM | | | | | | TO | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | INDIVIDUAL LENGTH ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 199 | 2 | | J6-F | 30 | N | | | 6 | K3-11 | 16 | N | | 11 | 9 |
| A 200 | 2 | | J6-E | 30 | N | | | 6 | K3-13 | 16 | N | | 11 | 9 |
| A 201 | 2 | | J6-D | 30 | N | | | 6 | K3-15 | 16 | N | | 11 | 9 |
| A 202 | 2 | | J6-C | 30 | N | | | 6 | K11-15 | 16 | N | | 11 | 15 |
| A 203 | 2 | | J6-G | 30 | N | | | 6 | K3-17 | 16 | N | | 11 | 9 |
| A 204 | 2 | | J6-H | 30 | N | | | 6 | K3-19 | 16 | N | | 11 | 9 |
| A 205 | 2 | | J6-J | 30 | N | | | 6 | K3-21 | 16 | N | | 11 | 9 |
| A 206 | 2 | | J6-K | 30 | N | | | 6 | K3-23 | 16 | N | | 11 | 9 |
| A 207 | 2 | | J6-L | 30 | N | | | 6 | K16-11 | 16 | N | | 11 | 24 |
| A 208 | 2 | | J6-M | 30 | N | | | 6 | K6- 1 | 16 | N | | 11 | 10 |
| A 209 | 2 | | J6-N | 30 | N | | | 6 | K6- 3 | 16 | N | | 11 | 10 |
| A 210 | 2 | | J6-P | 30 | N | | | 6 | K6- 5 | 16 | N | | 11 | 10 |
| A 211 | 2 | | J6-R | 30 | N | | | 6 | K6- 7 | 16 | N | | 11 | 10 |
| A 212 | 2 | | J6-S | 30 | N | | | 6 | K11-17 | 16 | N | | 11 | 15 |
| A 213 | 2 | | J6-T | 30 | N | | | 6 | K6- 9 | 16 | N | | 11 | 10 |
| A 214 | 2 | | J6-U | 30 | N | | | 6 | K6-11 | 16 | N | | 11 | 10 |
| A 215 | 2 | | J6-V | 30 | N | | | 6 | K6-13 | 16 | N | | 11 | 10 |
| A 216 | 2 | | J6-W | 30 | N | | | 6 | K6-15 | 16 | N | | 11 | 10 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GED WIRING HARNESS A C 1900094

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CIRCUIT POINT | FROM T I N | FROM TERMINATION SPEC. ITEM NO. | FROM NO. | TO CIRCUIT POINT | TO T I N | TO TERMINATION SPEC ITEM NO. | TO NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 217 | 2 | J6-Y | 30N | | 6 | K6-17 | 16N | 11 | 10 |
| A 218 | 2 | J6-Z | 30N | | 6 | K6-19 | 16N | 11 | 10 |
| A 219 | 2 | J6-A* | 30N | | 6 | K6-21 | 16N | 11 | 10 |
| A 220 | 2 | J6-B* | 30N | | 6 | K6-23 | 16N | 11 | 10 |
| A 221 | 2 | J6-D* | 30N | | 6 | K9- 1 | 16N | 11 | 11 |
| A 222 | 2 | J6-E* | 30N | | 6 | K9- 3 | 16N | 11 | 11 |
| A 223 | 2 | J6-F* | 30N | | 6 | K9- 5 | 16N | 11 | 11 |
| A 224 | 2 | J6-G* | 30N | | 6 | K9- 7 | 16N | 11 | 11 |
| A 225 | 2 | J6-I* | 30N | | 6 | K9- 9 | 16N | 11 | 11 |
| A 226 | 2 | J6-J* | 30N | | 6 | K9-11 | 16N | 11 | 11 |
| A 227 | 2 | J6-K* | 30N | | 6 | K9-13 | 16N | 11 | 11 |
| A 228 | 2 | J6-M* | 30N | | 6 | K9-15 | 16N | 11 | 11 |
| A 229 | 2 | J6-P* | 30N | | 6 | K9-17 | 16N | 11 | 11 |
| A 230 | 2 | J6-Q* | 30N | | 6 | K9-19 | 16N | 11 | 11 |
| A 231 | 2 | J6-R* | 30N | | 6 | K9-21 | 16N | 11 | 11 |
| A 232 | 2 | J6-S* | 30N | | 6 | K9-23 | 16N | 11 | 11 |
| A 233 | 2 | J6-T* | 30N | | 6 | K11-19 | 16N | 11 | 15 |
| A 234 | 1 | P1-A | 30N | | 5 | E1 | 30Y | | 8 |

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| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CIRCUIT POINT | FROM T I N | FROM TERMINATION SPEC. ITEM NO. | FROM NO. | TO CIRCUIT POINT | TO T I N | TO TERMINATION SPEC ITEM NO. | TO NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 235 | 2 | K1- 1 | 16N | 11 | 29 | K7- 1 | 16N | 11 | 27 |
| A 236 | 2 | K1- 3 | 16N | 11 | 29 | K7- 3 | 16N | 11 | 27 |
| A 237 | 2 | K1- 5 | 16N | 11 | 29 | K7- 5 | 16N | 11 | 27 |
| A 238 | 2 | K1- 7 | 16N | 11 | 29 | K7- 7 | 16N | 11 | 27 |
| A 239 | 2 | K1- 9 | 16N | 11 | 29 | K7- 9 | 16N | 11 | 27 |
| A 240 | 2 | K1-11 | 16N | 11 | 29 | K7-11 | 16N | 11 | 27 |
| A 241 | 2 | K1-13 | 16N | 11 | 29 | K7-13 | 16N | 11 | 27 |
| A 242 | 2 | K1-15 | 16N | 11 | 29 | K7-15 | 16N | 11 | 27 |
| A 243 | 2 | K1-17 | 16N | 11 | 29 | K7-17 | 16N | 11 | 27 |
| A 244 | 2 | K1-19 | 16N | 11 | 29 | K7-19 | 16N | 11 | 27 |
| A 245 | 2 | K1-21 | 16N | 11 | 29 | K7-21 | 16N | 11 | 27 |
| A 246 | 2 | K1-23 | 16N | 11 | 29 | K7-23 | 16N | 11 | 27 |
| A 247 | 2 | K2- 1 | 16N | 11 | 19 | K8- 1 | 16N | 11 | 21 |
| A 248 | 2 | K2- 3 | 16N | 11 | 19 | K8- 3 | 16N | 11 | 21 |
| A 249 | 2 | K2- 5 | 16N | 11 | 19 | K8- 5 | 16N | 11 | 21 |
| A 250 | 2 | K2- 7 | 16N | 11 | 19 | K8- 7 | 16N | 11 | 21 |
| A 251 | 2 | K2- 9 | 16N | 11 | 19 | K8- 9 | 16N | 11 | 21 |
| A 252 | 2 | K2-11 | 16N | 11 | 19 | K8-11 | 16N | 11 | 21 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

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| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CIRCUIT POINT | FROM T I N | FROM TERMINATION SPEC. ITEM NO. | FROM NO. | TO CIRCUIT POINT | TO T I N | TO TERMINATION SPEC ITEM NO. | TO NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 253 | 2 | K2-13 | 16N | 11 | 18 | K8-13 | 16N | 11 | 16 |
| A 254 | 2 | K2-17 | 16N | 11 | 18 | K8-17 | 16N | 11 | 16 |
| A 255 | 2 | K2-19 | 16N | 11 | 18 | K8-19 | 16N | 11 | 16 |
| A 256 | 2 | K2-21 | 16N | 11 | 18 | K8-21 | 16N | 11 | 16 |
| A 257 | 2 | K2-23 | 16N | 11 | 18 | K8-23 | 16N | 11 | 16 |
| A 258 | 2 | K3- 1 | 16N | 11 | 9 | K11- 9 | 16N | 11 | 22 |
| A 259 | 2 | K4-11 | 16N | 11 | 28 | K11-11 | 16N | 11 | 22 |
| A 260 | 2 | K3-11 | 16N | 11 | 9 | K16-19 | 16N | 11 | 24 |
| A 261 | 2 | K3- 9 | 16N | 11 | 9 | K11-21 | 16N | 11 | 15 |
| A 262 | 2 | K3-15 | 16N | 11 | 9 | K8-15 | 16N | 11 | 16 |
| A 263 | 2 | K3-17 | 16N | 11 | 9 | K12- 1 | 16N | 11 | 12 |
| A 264 | 2 | K3-19 | 16N | 11 | 9 | K12- 3 | 16N | 11 | 12 |
| A 265 | 2 | K3-21 | 16N | 11 | 9 | K12- 5 | 16N | 11 | 12 |
| A 266 | 2 | K3-23 | 16N | 11 | 9 | K12- 7 | 16N | 11 | 12 |
| A 267 | 2 | K4- 1 | 16N | 11 | 28 | K10- 1 | 16N | 11 | 26 |
| A 268 | 2 | K4- 3 | 16N | 11 | 28 | K10- 3 | 16N | 11 | 26 |
| A 269 | 2 | K4- 5 | 16N | 11 | 28 | K10- 5 | 16N | 11 | 26 |
| A 270 | 2 | K4- 7 | 16N | 11 | 28 | K10- 7 | 16N | 11 | 26 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

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| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CIRCUIT POINT | FROM T I N | FROM TERMINATION SPEC. ITEM NO. | FROM NO. | TO CIRCUIT POINT | TO T I N | TO TERMINATION SPEC ITEM NO. | TO NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 271 | 2 | K4- 9 | 16N | 11 | 28 | K10- 9 | 16N | 11 | 26 |
| A 272 | 2 | K5- 9 | 16N | 11 | 20 | K10-17 | 16N | 11 | 26 |
| A 273 | 2 | K5-11 | 16N | 11 | 20 | K10-19 | 16N | 11 | 26 |
| A 274 | 2 | K5-13 | 16N | 11 | 17 | K10-21 | 16N | 11 | 26 |
| A 275 | 2 | K5-15 | 16N | 11 | 17 | K10-23 | 16N | 11 | 26 |
| A 276 | 2 | K5-17 | 16N | 11 | 17 | K11- 1 | 16N | 11 | 22 |
| A 277 | 2 | K5-19 | 16N | 11 | 17 | K11- 3 | 16N | 11 | 22 |
| A 278 | 2 | K5-21 | 16N | 11 | 17 | K11- 5 | 16N | 11 | 22 |
| A 279 | 2 | K5-23 | 16N | 11 | 17 | K11- 9 | 16N | 11 | 22 |
| A 280 | 2 | K6- 1 | 16N | 11 | 10 | K15- 1 | 16N | 11 | 13 |
| A 281 | 2 | K6- 3 | 16N | 11 | 10 | K15- 3 | 16N | 11 | 13 |
| A 282 | 2 | K6- 5 | 16N | 11 | 10 | K15- 5 | 16N | 11 | 13 |
| A 283 | 2 | K6- 7 | 16N | 11 | 10 | K15- 7 | 16N | 11 | 13 |
| A 284 | 2 | K6- 9 | 16N | 11 | 10 | K12- 9 | 16N | 11 | 12 |
| A 285 | 2 | K6-11 | 16N | 11 | 10 | K12-11 | 16N | 11 | 12 |
| A 286 | 2 | K6-13 | 16N | 11 | 10 | K12-13 | 16N | 11 | 12 |
| A 287 | 2 | K6-15 | 16N | 11 | 10 | K12-15 | 16N | 11 | 12 |
| A 288 | 2 | K6-17 | 16N | 11 | 10 | K12-17 | 16N | 11 | 12 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

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| CONDUCTOR |  |  | FROM |  |  |  |  |  | TO |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 289 | 2 |  | K6-19 | 16 | N |  | 11 | 10 | K12-19 | 16 | N |  | 11 | 12 |
| A 290 | 2 |  | K6-21 | 16 | N |  | 11 | 10 | K12-21 | 16 | N |  | 11 | 12 |
| A 291 | 2 |  | K1-A | 16 | N |  | 11 | 29 | K4-A | 16 | N |  | 11 | 28 |
| A 292 | 2 |  | K2-A | 16 | N |  | 11 | 18 | K1-A | 16 | N |  | 11 | 29 |
| A 293 | 2 |  | K2-B | 16 | N |  | 11 | 18 | K1-B | 16 | N |  | 11 | 29 |
| A 294 | 2 |  | K1-B | 16 | N |  | 11 | 29 | K4-B | 16 | N |  | 11 | 28 |
| A 295 | 2 |  | K2-A | 16 | N |  | 11 | 18 | K3-A | 16 | N |  | 11 | 9 |
| A 296 | 2 |  | K2-B | 16 | N |  | 11 | 18 | K3-B | 16 | N |  | 11 | 9 |
| A 297 | 2 |  | K4-A | 16 | N |  | 11 | 28 | K5-A | 16 | N |  | 11 | 17 |
| A 298 | 2 |  | K4-B | 16 | N |  | 11 | 28 | K5-B | 16 | N |  | 11 | 17 |
| A 299 | 2 |  | K6-A | 16 | N |  | 11 | 10 | K5-A | 16 | N |  | 11 | 17 |
| A 300 | 2 |  | K6-B | 16 | N |  | 11 | 10 | K5-B | 16 | N |  | 11 | 17 |
| A 301 | 2 |  | K6-A | 16 | N |  | 11 | 10 | K9-A | 16 | N |  | 11 | 11 |
| A 302 | 2 |  | K6-B | 16 | N |  | 11 | 10 | K9-B | 16 | N |  | 11 | 11 |
| A 303 | 2 |  | K6-23 | 16 | N |  | 11 | 10 | K12-23 | 16 | N |  | 11 | 12 |
| A 304 | 2 |  | K8-B | 16 | N |  | 11 | 16 | K9-B | 16 | N |  | 11 | 11 |
| A 305 | 2 |  | K7-A | 16 | N |  | 11 | 27 | K10-A | 16 | N |  | 11 | 26 |
| A 306 | 2 |  | K8-A | 16 | N |  | 11 | 16 | K7-A | 16 | N |  | 11 | 27 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
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| CONDUCTOR |  |  | FROM |  |  |  |  |  | TO |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 307 | 2 |  | K8-B | 16 | N |  | 11 | 16 | K7-B | 16 | N |  | 11 | 27 |
| A 308 | 2 |  | K7-B | 16 | N |  | 11 | 27 | K10-B | 16 | N |  | 11 | 26 |
| A 309 | 2 |  | K15-23 | 16 | N |  | 11 | 13 | K12-23 | 16 | N |  | 11 | 12 |
| A 310 | 2 |  | K8-15 | 16 | N |  | 11 | 16 | K16-17 | 16 | N |  | 11 | 24 |
| A 311 | 2 |  | K9- 1 | 16 | N |  | 11 | 11 | K14- 1 | 16 | N |  | 11 | 23 |
| A 312 | 2 |  | K9- 3 | 16 | N |  | 11 | 11 | K14- 3 | 16 | N |  | 11 | 23 |
| A 313 | 2 |  | K9- 5 | 16 | N |  | 11 | 11 | K14- 5 | 16 | N |  | 11 | 23 |
| A 314 | 2 |  | K9- 7 | 16 | N |  | 11 | 11 | K14- 7 | 16 | N |  | 11 | 23 |
| A 315 | 2 |  | K9- 9 | 16 | N |  | 11 | 11 | K14- 9 | 16 | N |  | 11 | 23 |
| A 316 | 2 |  | K9-11 | 16 | N |  | 11 | 11 | K14-11 | 16 | N |  | 11 | 23 |
| A 317 | 2 |  | K9-13 | 16 | N |  | 11 | 11 | K14-13 | 16 | N |  | 11 | 14 |
| A 318 | 2 |  | K9-15 | 16 | N |  | 11 | 11 | K14-15 | 16 | N |  | 11 | 14 |
| A 319 | 2 |  | K9-17 | 16 | N |  | 11 | 11 | K13-17 | 16 | N |  | 11 | 25 |
| A 320 | 2 |  | K9-19 | 16 | N |  | 11 | 11 | K13-19 | 16 | N |  | 11 | 25 |
| A 321 | 2 |  | K9-21 | 16 | N |  | 11 | 11 | K13-21 | 16 | N |  | 11 | 25 |
| A 322 | 2 |  | K9-23 | 16 | N |  | 11 | 11 | K13-23 | 16 | N |  | 11 | 25 |
| A 323 | 2 |  | K10-11 | 16 | N |  | 11 | 26 | K16- 1 | 16 | N |  | 11 | 24 |
| A 324 | 2 |  | K10-13 | 16 | N |  | 11 | 26 | K16- 3 | 16 | N |  | 11 | 24 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
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| CONDUCTOR |  |  | FROM |  |  |  |  |  | TO |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 325 | 2 |  | K10-15 | 16 | N |  | 11 | 26 | K16- 5 | 16 | N |  | 11 | 24 |
| A 326 | 2 |  | K11-A | 16 | N |  | 11 | 15 | K10-A | 16 | N |  | 11 | 26 |
| A 327 | 2 |  | K11-B | 16 | N |  | 11 | 15 | K10-B | 16 | N |  | 11 | 26 |
| A 328 | 2 |  | K11-11 | 16 | N |  | 11 | 22 | K16-13 | 16 | N |  | 11 | 24 |
| A 329 | 2 |  | K11-13 | 16 | N |  | 11 | 15 | K16- 7 | 16 | N |  | 11 | 24 |
| A 330 | 2 |  | K11-23 | 16 | N |  | 11 | 15 | K16-13 | 16 | N |  | 11 | 24 |
| A 331 | 2 |  | K11-10 | 16 | N |  | 11 | 22 | K12- 8 | 16 | N |  | 11 | 12 |
| A 332 | 2 |  | K11-A | 16 | N |  | 11 | 15 | K12-A | 16 | N |  | 11 | 12 |
| A 333 | 2 |  | K11-B | 16 | N |  | 11 | 15 | K12-B | 16 | N |  | 11 | 12 |
| A 334 | 2 |  | K12- 9 | 16 | N |  | 11 | 12 | K15- 9 | 16 | N |  | 11 | 13 |
| A 335 | 2 |  | K12-11 | 16 | N |  | 11 | 12 | K15-11 | 16 | N |  | 11 | 13 |
| A 336 | 2 |  | K12-13 | 16 | N |  | 11 | 12 | K15-13 | 16 | N |  | 11 | 13 |
| A 337 | 2 |  | K12-15 | 16 | N |  | 11 | 12 | K15-15 | 16 | N |  | 11 | 13 |
| A 338 | 2 |  | K12-17 | 16 | N |  | 11 | 12 | K15-17 | 16 | N |  | 11 | 13 |
| A 339 | 2 |  | K12-19 | 16 | N |  | 11 | 12 | K15-19 | 16 | N |  | 11 | 13 |
| A 340 | 2 |  | K12-21 | 16 | N |  | 11 | 12 | K15-21 | 16 | N |  | 11 | 13 |
| A 341 | 2 |  | K14-A | 16 | N |  | 11 | 14 | K12-A | 16 | N |  | 11 | 12 |
| A 342 | 2 |  | K15-B | 16 | N |  | 11 | 13 | K12-B | 16 | N |  | 11 | 12 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
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MIL 2085 · 4-63 WIR

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GED WIRING HARNESS A C 1900094

| CONDUCTOR |  |  | FROM |  |  |  |  |  | TO |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 343 | 2 |  | K14- 1 | 16 | N |  | 11 | 23 | K13- 1 | 16 | N |  | 11 | 25 |
| A 344 | 2 |  | K14- 3 | 16 | N |  | 11 | 23 | K13- 3 | 16 | N |  | 11 | 25 |
| A 345 | 2 |  | K14- 5 | 16 | N |  | 11 | 23 | K13- 5 | 16 | N |  | 11 | 25 |
| A 346 | 2 |  | K14- 7 | 16 | N |  | 11 | 23 | K13- 7 | 16 | N |  | 11 | 25 |
| A 347 | 2 |  | K14- 9 | 16 | N |  | 11 | 23 | K13- 9 | 16 | N |  | 11 | 25 |
| A 348 | 2 |  | K14-11 | 16 | N |  | 11 | 23 | K13-11 | 16 | N |  | 11 | 25 |
| A 349 | 2 |  | K14-13 | 16 | N |  | 11 | 14 | K13-13 | 16 | N |  | 11 | 25 |
| A 350 | 2 |  | K14-15 | 16 | N |  | 11 | 14 | K13-15 | 16 | N |  | 11 | 25 |
| A 351 | 2 |  | K14-B | 16 | N |  | 11 | 14 | K15-B | 16 | N |  | 11 | 13 |
| A 352 | 2 |  | K14-B | 16 | N |  | 11 | 14 | K13-B | 16 | N |  | 11 | 25 |
| A 353 | 2 |  | K13- 8 | 16 | N |  | 11 | 25 | K15- 8 | 16 | N |  | 11 | 13 |
| A 354 | 2 |  | K13-A | 16 | N |  | 11 | 25 | K15-A | 16 | N |  | 11 | 13 |
| A 355 | 2 |  | K13-24 | 16 | N |  | 11 | 25 | K16-16 | 16 | N |  | 11 | 24 |
| A 356 | 2 |  | K13-A | 16 | N |  | 11 | 25 | K16-A | 16 | N |  | 11 | 24 |
| A 357 | 2 |  | K13-B | 16 | N |  | 11 | 25 | K16-B | 16 | N |  | 11 | 24 |
| A 358 | 2 |  | K2-15 | 16 | N |  | 11 | 18 | K14-23 | 16 | N |  | 11 | 14 |
| A 359 | 2 |  | K2-16 | 16 | N |  | 11 | 18 | K14-24 | 16 | N |  | 11 | 14 |
| A 360 | 2 |  | K3-10 | 16 | N |  | 11 | 9 | K11-24 | 16 | N |  | 11 | 15 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
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SIZE A
1900094
SCALE - NONE
REV LTR C
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GED WIRING HARNESS A C 1900094

| CONDUCTOR | | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH | | | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET | | | TERMINATION SPEC. 1> | | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET | | | TERMINATION SPEC 1> | |
| NUMBER | ITEM NO. | 2> | CIRCUIT POINT | 2> | TIN | ITEM NO. | NO. | CIRCUIT POINT | 2> | TIN | ITEM NO. | NO. |
| A 361 | 2 | | J6-A | 30 | N | | 6 | K3- 7 | 16 | N | 11 | 9 |
| A 362 | 2 | | J2-Q* | 30 | N | | 2 | K3- 8 | 16 | N | 11 | 9 |
| A 363 | 2 | | J3-S* | 30 | N | | 3 | K14-18 | 16 | N | 11 | 14 |
| A 364 | 2 | | K14-17 | 16 | N | 11 | 14 | K16-19 | 16 | N | 11 | 24 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
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HOUSTON, TEXAS

SIZE A

1900094

SCALE - NONE

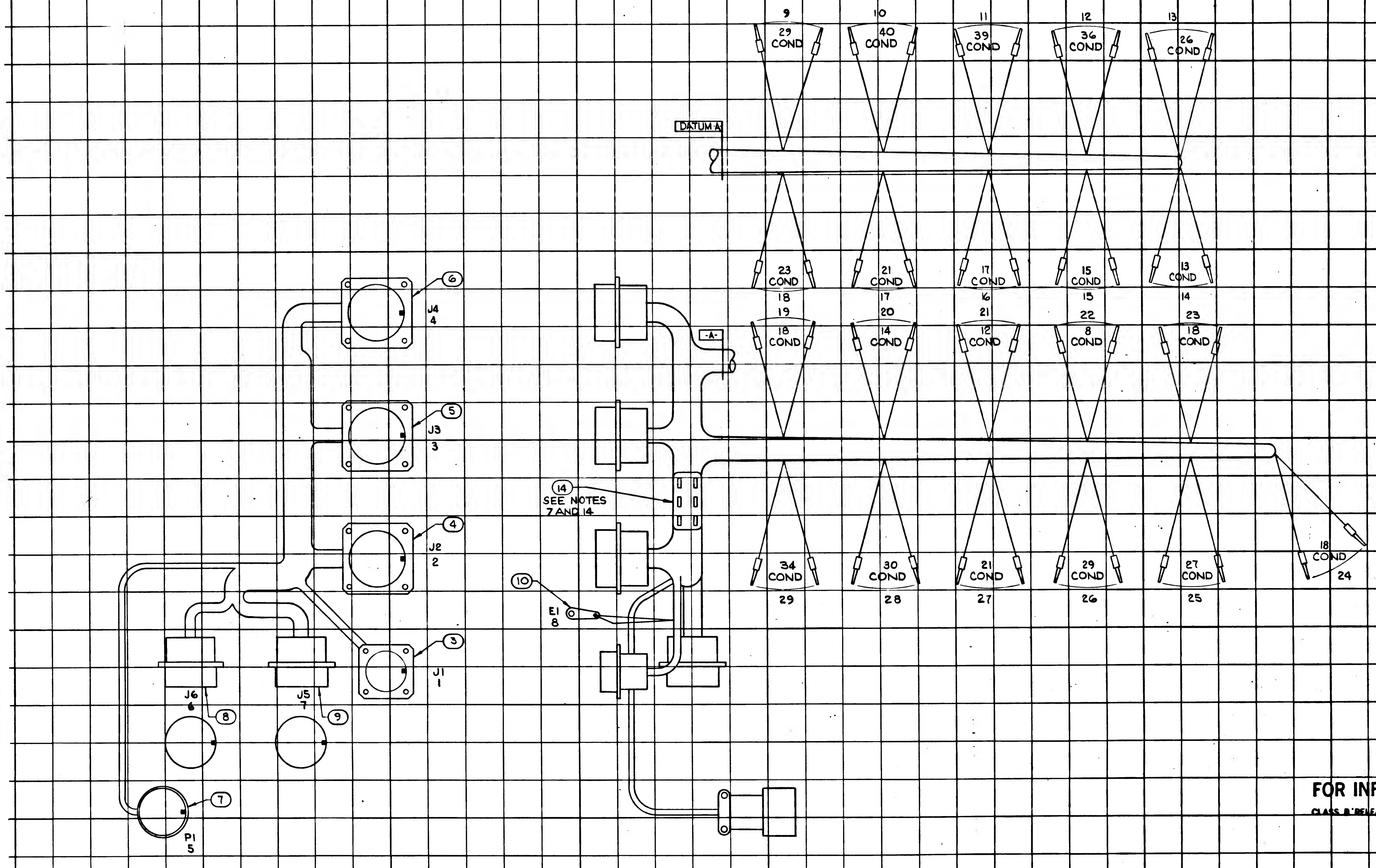
REV LTR C

SHEET 25 OF 26

MIL 2085 · 4-63 WIR

(7)

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
|  |  | CHANGE IN ACCORDANCE WITH CM 196233 |  | 21 MAY '64 | EM |



FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 23597 DATE 10/17/63

1900094 C

| | | |
|---|---|---|
| UNLESS OTHERWISE SPECIFIED<br>DIMENSIONS ARE IN INCHES<br>TOLERANCES ON<br>FRACTIONS ± DECIMALS ± ANGLES ±<br>DO NOT SCALE THIS DRAWING | AC SPARK PLUG DIVISION, GMC<br>MILWAUKEE, WISCONSIN<br>ACSP PN | MANNED SPACECRAFT CENTER<br>HOUSTON, TEXAS |
| MATERIAL | DRAWN S. Crane DATE 21 AUG 63<br>M. Manning 19 SEP 63<br>CHECKED<br>APPROVAL H. Williams 19 SEP 63<br>APPROVAL C. Gehman 9/4/63 | WIRING HARNESS "A" |
| CONTRACT NAS 9-497 | NASA APPROVAL<br>MIT APPROVAL 15 Oct 63 | CODE IDENT NO. SIZE E 1900094 |
| NEXT ASSY / USED ON<br>APPLICATION |  | SCALE FULL SHEET 26 OF 26 |

| APPLICATION | | REVISIONS | | | |
|---|---|---|---|---|---|
| NEXT ASSY | USED ON | SYM | DESCRIPTION | DATE | APPROVAL |
| 1900052-011 | 1900052-011 | A | CHANGE IN ACCORDANCE WITH MXC 190756 TDRR 09712 | 25 OCT 63 | WSM<br>PM |
| | | B | CHANGE IN ACCORDANCE WITH MXC 191671 TDRR 09713 | 21 NOV 63 | EL<br>PM |
| | | (M) C | CHANGE IN ACCORDANCE WITH CM 196233 TDRR 09714 | 21 MAY 64 | EM<br>W.D. |
| | | D | REVISED PER TDRR NO. 10755 | 29 JUL 64 | JJJ<br>MSM |

**FOR INFORMATION ONLY**

**CLASS B RELEASE TDR No.** 03897 **DATE** 11/1/63

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| REV | C | C | C | | | | | | | | | | | | | | | | | | | | |
| SHEET | 24 | 25 | 26 | | | | | | | | | | | | | | | | | | | | |
| REV STATUS OF SHEETS REV | D | C | C | C | C | C | C | D | C | C | C | C | C | C | C | C | C | C | C | C | C | C | C |
| SHEET | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |

AC SPARK PLUG DIVISION , GMC
MILWAUKEE, WISCONSIN

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HOUSTON, TEXAS

ACSP PN

DRAWN S. Agne DATE 21 AUG 63
CHECKED M. MANNING 19 SEP 63
APPROVAL W. Williams 19 SEP 63
APPROVAL [illegible] 11/1/63
NASA APPROVAL [illegible] 10/17/63
MIT APPROVAL [illegible] 13-4-E
CONTRACT

WIRING HARNESS A

CODE IDENT NO.
SIZE
1900094
REV D
SCALE
SHEET 1 OF 26

PENNANT GENERAL NOTES

NOTE

1 SEE CONDUCTOR CHART. PENNANT NOTE 1.

2 SEE CONDUCTOR CHART. PENNANT NOTE 2.

3 MARK CONDUCTOR IDENTIFICATION PER ND1002019.

4 SPACING OF CONDUCTOR IDENTIFICATION SHALL BE EVERY 1.2 INCHES.

5 SPIRALLING OF THE MARKING IS ALLOWED.

6 LACE HARNESS USING ITEM 15.

7 IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (ES-2671).

8 SOLDER PER MIL-STD-440 USING ITEMS 12 AND 13.

9 Y OR N IN TINNED COLUMN INDICATES YES OR NO.

10 A LETTER WITH AN ASTERISK SUFFIX, INDICATES A LOWER CASE LETTER.

11 GRID MODULE IS 1 INCH.

12 VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.

13 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

14 FASTEN MARKER SECURELY WITH ITEM 15. WRAP MARKER TO CONFORM TO CABLE CONFIGURATION.

15 UNLESS OTHERWISE SPECIFIED --- FEATURE CENTERLINES ARE LOCATED WITHIN + OR - .25 INCH. END OF HOOKUP WIRES OR ACESSORIES ARE LOCATED WITHIN + OR - .12 INCH.

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PENNANT GENERAL NOTES

NOTE

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

| APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD. | TOLERANCE WIRE OR CABLE | STRIP WIRE | STRIP JACKET | CUT WIRE | CUT SHIELD |
|---|---|---|---|---|---|
| UNDER 1 INCH | + .06-.00 | +.03-.00 | +.06-.06 | +.06-.06 | +.06-.06 |
| 1 INCH TO 6 INCHES | + .50-.00 | +.06-.00 | +.25-.25 | +.25-.25 | +.25-.25 |
| 6 INCHES TO 6 FEET | +1.00-.00 | | +.50-.50 | +.50-.50 | +.50-.50 |
| OVER 6 FEET | +2.00-.00 | | | | |

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REV LTR C

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PENNANT LIST OF MATERIALS

| NOTE | ITEM | QTY | PART NO | DESCRIPTION |
|---|---|---|---|---|
| | 1 | 1 | 1900094-001 | WIRE PER ND1002181 TYPE 1, CLASS 1, 20AWG, WHT, 8.5 FT TOTAL LENGTH |
| | 2 | 1 | 1900094-002 | WIRE PER ND1002181 TYPE 1, CLASS 1, 24AWG, WHT, 561 FT TOTAL LENGTH |
| | 3 | 1 | MS-3127E-16-8PW (1897049-081) | CONNECTOR, RECEPTACLE |
| | 4 | 1 | MS-3127E-24-61P (1897055-610) | CONNECTOR, RECEPTACLE |
| | 5 | 1 | MS-3127E-24-61PW (1897055-611) | CONNECTOR, RECEPTACLE |
| | 6 | 1 | MS-3127E-24-61PX (1897055-612) | CONNECTOR, RECEPTACLE |
| | 7 | 1 | MS-3126F-16-8S (1897042-080) | CONNECTOR, PLUG |
| | 8 | 1 | MS-3127E-20-41S (1897052-410) | CONNECTOR, RECEPTACLE |
| | 9 | 1 | MS-3127E-22-55S (1897054-550) | CONNECTOR, RECEPTACLE |
| | 10 | 1 | MS35431-4 | TERMINAL LUG |
| 12 | 11 | 488 | 1015949-002 | TERMINAL PIN |
| | 12 | AR | QQ-S-571 | SOLDER SN60 (ES-2175 ALLOY 1) |
| | 13 | AR | QQ-S-571 | FLUX MIL-F-14256 (ES-2798) OR FLUX TYPE AR (ES-2175 TYPE 1 OR 2) |
| 12 | 14 | 1 | 1016128-001 | BAND-IDENTIFICATION |
| | 15 | AR | MIL-T-713 | LACING TAPE TYPE P, CLASS 2 BLACK (ES-2732 NO. 18) |

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
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REV LTR C

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| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | 2> | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2> | T/N | TERMINATION SPEC 1> ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2> | T/N | TERMINATION SPEC 1> ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 1 | 1 | | J1-A | 30 | N | | 1 | E1 | 30 | Y | | 8 |
| A 2 | 2 | | J1-C | 30 | N | | 1 | K3-B | 16 | N | 11 | 9 |
| A 3 | 1 | | J1-D | 30 | N | | 1 | P1-D | 30 | N | | 9 |
| A 4 | 1 | | J1-E | 30 | N | | 1 | P1-E | 30 | N | | 9 |
| A 5 | 2 | | J1-F | 30 | N | | 1 | K3-A | 16 | N | 11 | 9 |
| A 6 | 2 | | J1-G | 30 | N | | 1 | K8-A | 16 | N | 11 | 16 |
| A 7 | 2 | | J1-H | 30 | N | | 1 | K15-A | 16 | N | 11 | 13 |
| A 8 | 2 | | J2-A | 30 | N | | 2 | K1- 2 | 16 | N | 11 | 29 |
| A 9 | 2 | | J2-B | 30 | N | | 2 | K1- 4 | 16 | N | 11 | 29 |
| A 10 | 2 | | J2-S | 30 | N | | 2 | K2-22 | 16 | N | 11 | 18 |
| A 11 | 2 | | J2-T | 30 | N | | 2 | K2-24 | 16 | N | 11 | 18 |
| A 12 | 2 | | J2-C | 30 | N | | 2 | K1-20 | 16 | N | 11 | 29 |
| A 13 | 2 | | J2-D | 30 | N | | 2 | K1-22 | 16 | N | 11 | 29 |
| A 14 | 2 | | J2-E | 30 | N | | 2 | K1-24 | 16 | N | 11 | 29 |
| A 15 | 2 | | J2-F | 30 | N | | 2 | K2- 2 | 16 | N | 11 | 19 |
| A 16 | 2 | | J2-G | 30 | N | | 2 | K2- 4 | 16 | N | 11 | 19 |
| A 17 | 2 | | J2-H | 30 | N | | 2 | K2- 6 | 16 | N | 11 | 19 |
| A 18 | 2 | | J2-J | 30 | N | | 2 | K2- 8 | 16 | N | 11 | 19 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

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SIZE A
1900094
SCALE-NONE
REV LTR C

GED WIRING HARNESS A C 1900094

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CIRCUIT POINT | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | TERMINATION SPEC. ITEM NO. | NO. | TO CIRCUIT POINT | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 19 | 2 | J2-K | 30N | | 2 | K2-10 | 16N | 11 | 19 |
| A 20 | 2 | J2-L | 30N | | 2 | K2-12 | 16N | 11 | 19 |
| A 21 | 2 | J2-M | 30N | | 2 | K2-14 | 16N | 11 | 18 |
| A 22 | 2 | J2-N | 30N | | 2 | K2-16 | 16N | 11 | 18 |
| A 23 | 2 | J2-P | 30N | | 2 | K2-18 | 16N | 11 | 18 |
| A 24 | 2 | J2-R | 30N | | 2 | K2-20 | 16N | 11 | 18 |
| A 25 | 2 | J2-U | 30N | | 2 | K4-12 | 16N | 11 | 28 |
| A 26 | 2 | J2-V | 30N | | 2 | K4-14 | 16N | 11 | 28 |
| A 27 | 2 | J2-W | 30N | | 2 | K4-16 | 16N | 11 | 28 |
| A 28 | 2 | J2-X | 30N | | 2 | K4-18 | 16N | 11 | 28 |
| A 29 | 2 | J2-Y | 30N | | 2 | K4-20 | 16N | 11 | 28 |
| A 30 | 2 | J2-Z | 30N | | 2 | K4-22 | 16N | 11 | 28 |
| A 31 | 2 | J2-A* | 30N | | 2 | K4-24 | 16N | 11 | 28 |
| A 32 | 2 | J2-B* | 30N | | 2 | K5- 2 | 16N | 11 | 20 |
| A 33 | 2 | J2-C* | 30N | | 2 | K5- 4 | 16N | 11 | 20 |
| A 34 | 2 | J2-D* | 30N | | 2 | K5- 6 | 16N | 11 | 20 |
| A 35 | 2 | J2-E* | 30N | | 2 | K5- 8 | 16N | 11 | 20 |
| A 36 | 2 | J2-F* | 30N | | 2 | K5-10 | 16N | 11 | 20 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

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MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900094
SCALE-NONE | REV LTR C | SHEET 6 OF 26

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GED WIRING HARNESS A C 1900094

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CIRCUIT POINT | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | TERMINATION SPEC. ITEM NO. | NO. | TO CIRCUIT POINT | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 37 | 2 | J2-G* | 30N | | 2 | K5-12 | 16N | 11 | 20 |
| A 38 | 2 | J2-H* | 30N | | 2 | K5-14 | 16N | 11 | 17 |
| A 39 | 2 | J2-I* | 30N | | 2 | K5-16 | 16N | 11 | 17 |
| A 40 | 2 | J2-J* | 30N | | 2 | K5-18 | 16N | 11 | 17 |
| A 41 | 2 | J2-K* | 30N | | 2 | K5-20 | 16N | 11 | 17 |
| A 42 | 2 | J2-M* | 30N | | 2 | K5-22 | 16N | 11 | 17 |
| A 43 | 2 | J2-N* | 30N | | 2 | K3- 4 | 16N | 11 | 9 |
| A 44 | 2 | J2-P* | 30N | | 2 | K3-12 | 16N | 11 | 9 |
| A 45 | | DELETED | | | | | | | |
| A 46 | 2 | J2-R* | 30N | | 2 | K3-14 | 16N | 11 | 9 |
| A 47 | 2 | J2-S* | 30N | | 2 | K3-16 | 16N | 11 | 9 |
| A 48 | 2 | J2-T* | 30N | | 2 | K3-18 | 16N | 11 | 9 |
| A 49 | 2 | J2-U* | 30N | | 2 | K6- 2 | 16N | 11 | 10 |
| A 50 | 2 | J2-V* | 30N | | 2 | K6- 4 | 16N | 11 | 10 |
| A 51 | 2 | J2-W* | 30N | | 2 | K6- 6 | 16N | 11 | 10 |
| A 52 | 2 | J2-X* | 30N | | 2 | K6- 8 | 16N | 11 | 10 |
| A 53 | 2 | J2-Y* | 30N | | 2 | K6-10 | 16N | 11 | 10 |
| A 54 | 2 | J2-Z* | 30N | | 2 | K6-12 | 16N | 11 | 10 |

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MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900094
SCALE-NONE | REV LTR C | SHEET 7 OF 26

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GED WIRING HARNESS A D 1900094

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CIRCUIT POINT | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | TERMINATION SPEC. ITEM NO. | NO. | TO CIRCUIT POINT | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 55 | 2 | J2-AA | 30N | | 2 | K6-14 | 16N | 11 | 10 |
| A 56 | 2 | J2-BB | 30N | | 2 | K6-16 | 16N | 11 | 10 |
| A 57 | 2 | J2-CC | 30N | | 2 | K6-18 | 16N | 11 | 10 |
| A 58 | 2 | J2-DD | 30N | | 2 | K6-20 | 16N | 11 | 10 |
| A 59 | 2 | J2-EE | 30N | | 2 | K6-22 | 16N | 11 | 10 |
| A 60 | 2 | J2-FF | 30N | | 2 | K6-24 | 16N | 11 | 10 |
| A 61 | 2 | J2-GG | 30N | | 2 | K9- 2 | 16N | 11 | 11 |
| A 62 | 2 | J2-HH | 30N | | 2 | K9- 4 | 16N | 11 | 11 |
| A 63 | 2 | J2-JJ | 30N | | 2 | K9- 6 | 16N | 11 | 11 |
| A 64 | 2 | J2-KK | 30N | | 2 | K9- 8 | 16N | 11 | 11 |
| A 65 | 2 | J2-LL | 30N | | 2 | K9-10 | 16N | 11 | 11 |
| A 66 | 2 | J2-MM | 30N | | 2 | K9-12 | 16N | 11 | 11 |
| A 67 | 2 | J2-NN | 30N | | 2 | K9-14 | 16N | 11 | 11 |
| A 68 | 2 | J2-PP | 30N | | 2 | K9-16 | 16N | 11 | 11 |
| A 69 | 2 | J3-N | 30N | | 3 | K7- 2 | 16N | 11 | 27 |
| A 70 | 2 | J3-P | 30N | | 3 | K7- 4 | 16N | 11 | 27 |
| A 71 | 2 | K1- 6 | 16N | 11 | 29 | K7-20 | 16N | 11 | 27 |
| A 72 | 2 | J3- S | 30N | | 3 | K7-22 | 16N | 11 | 27 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

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SCALE-NONE | REV LTR D | SHEET 8 OF 26

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GED WIRING HARNESS A C 1900094

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CIRCUIT POINT | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | TERMINATION SPEC. ITEM NO. | NO. | TO CIRCUIT POINT | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 73 | 2 | J3-T | 30N | | 3 | K7-24 | 16N | 11 | 27 |
| A 74 | 2 | J3-U | 30N | | 3 | K8- 2 | 16N | 11 | 21 |
| A 75 | 2 | J3-V | 30N | | 3 | K8- 4 | 16N | 11 | 21 |
| A 76 | 2 | J3-W | 30N | | 3 | K8- 6 | 16N | 11 | 21 |
| A 77 | 2 | J3-X | 30N | | 3 | K8- 8 | 16N | 11 | 21 |
| A 78 | 2 | J3-Y | 30N | | 3 | K8-10 | 16N | 11 | 21 |
| A 79 | 2 | J3-Z | 30N | | 3 | K8-12 | 16N | 11 | 21 |
| A 80 | 2 | J3-A* | 30N | | 3 | K8-14 | 16N | 11 | 16 |
| A 81 | 2 | J3-B* | 30N | | 3 | K8-16 | 16N | 11 | 16 |
| A 82 | 2 | J3-C* | 30N | | 3 | K8-18 | 16N | 11 | 16 |
| A 83 | 2 | J3-D* | 30N | | 3 | K8-20 | 16N | 11 | 16 |
| A 84 | 2 | J3-E* | 30N | | 3 | K8-22 | 16N | 11 | 16 |
| A 85 | 2 | J3-F* | 30N | | 3 | K8-24 | 16N | 11 | 16 |
| A 86 | 2 | J3-G* | 30N | | 3 | K10- 2 | 16N | 11 | 26 |
| A 87 | 2 | J3-H* | 30N | | 3 | K10- 4 | 16N | 11 | 26 |
| A 88 | 2 | J3-I* | 30N | | 3 | K10- 6 | 16N | 11 | 26 |
| A 89 | 2 | J3-J* | 30N | | 3 | K10- 8 | 16N | 11 | 26 |
| A 90 | 2 | J3-K* | 30N | | 3 | K10-10 | 16N | 11 | 26 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900094
SCALE-NONE | REV LTR C | SHEET 9 OF 26

GED WIRING HARNESS A C 1900094

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TERMINATION SPEC ITEM NO. | NO. | TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 91 | 2 | J3-M* | 30N | | 3 | K10-12 | 16N | 11 | 26 |
| A 92 | 2 | J3-N* | 30N | | 3 | K10-18 | 16N | 11 | 26 |
| A 93 | 2 | J3-P* | 30N | | 3 | K10-20 | 16N | 11 | 26 |
| A 94 | 2 | J3-Q* | 30N | | 3 | K10-22 | 16N | 11 | 26 |
| A 95 | 2 | J3-R* | 30N | | 3 | K10-24 | 16N | 11 | 26 |
| A 96 | 2 | K4- 6 | 16N | 11 | 28 | K11-16 | 16N | 11 | 15 |
| A 97 | 2 | J3-T* | 30N | | 3 | K11-24 | 16N | 11 | 15 |
| A 98 | 2 | J3-U* | 30N | | 3 | K11-22 | 16N | 11 | 15 |
| A 99 | 2 | J3-V* | 30N | | 3 | K12- 2 | 16N | 11 | 12 |
| A 100 | 2 | J3-W* | 30N | | 3 | K12- 4 | 16N | 11 | 12 |
| A 101 | 2 | J3-X* | 30N | | 3 | K12- 6 | 16N | 11 | 12 |
| A 102 | 2 | J3-Y* | 30N | | 3 | K12-10 | 16N | 11 | 12 |
| A 103 | 2 | J3-Z* | 30N | | 3 | K12-12 | 16N | 11 | 12 |
| A 104 | 2 | J3-AA | 30N | | 3 | K12-14 | 16N | 11 | 12 |
| A 105 | 2 | J3-BB | 30N | | 3 | K12-16 | 16N | 11 | 12 |
| A 106 | 2 | J3-CC | 30N | | 3 | K12-18 | 16N | 11 | 12 |
| A 107 | 2 | J3-DD | 30N | | 3 | K12-20 | 16N | 11 | 12 |
| A 108 | 2 | J3-E | 30N | | 3 | K12-22 | 16N | 11 | 12 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GED WIRING HARNESS A C 1900094

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TERMINATION SPEC ITEM NO. | NO. | TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TERMINATION SPEC ITEM NO. | NO |
|---|---|---|---|---|---|---|---|---|---|
| A 109 | 2 | J3-FF | 30N | | 3 | K12-24 | 16N | 11 | 12 |
| A 110 | 2 | J3-GG | 30N | | 3 | K14- 2 | 16N | 11 | 23 |
| A 111 | 2 | J3-HH | 30N | | 3 | K14- 4 | 16N | 11 | 23 |
| A 112 | 2 | J3-JJ | 30N | | 3 | K14- 6 | 16N | 11 | 23 |
| A 113 | 2 | J3-KK | 30N | | 3 | K14- 8 | 16N | 11 | 23 |
| A 114 | 2 | J3-LL | 30N | | 3 | K14-10 | 16N | 11 | 23 |
| A 115 | 2 | J3-MM | 30N | | 3 | K14-12 | 16N | 11 | 23 |
| A 116 | 2 | J3-NN | 30N | | 3 | K14-14 | 16N | 11 | 14 |
| A 117 | 2 | J3-PP | 30N | | 3 | K14-16 | 16N | 11 | 14 |
| A 118 | 2 | J4-A | 30N | | 4 | K9-18 | 16N | 11 | 11 |
| A 119 | 2 | J4-B | 30N | | 4 | K9-20 | 16N | 11 | 11 |
| A 120 | 2 | J4-C | 30N | | 4 | K9-22 | 16N | 11 | 11 |
| A 121 | 2 | J4-D | 30N | | 4 | K9-24 | 16N | 11 | 11 |
| A 122 | 2 | J4- * | 30N | | 4 | K15- 2 | 16N | 11 | 13 |
| A 123 | 2 | J4-T* | 30N | | 4 | K15- 4 | 16N | 11 | 13 |
| A 124 | 2 | J4-U* | 30N | | 4 | K15- 6 | 16N | 11 | 13 |
| A 125 | 2 | J4-V* | 30N | | 4 | K15-10 | 16N | 11 | 13 |
| A 126 | 2 | J4-W* | 30N | | 4 | K15-12 | 16N | 11 | 13 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
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GED WIRING HARNESS A C 1900094

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TERMINATION SPEC ITEM NO. | NO. | TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TERMINATION SPEC ITEM NO. | NO |
|---|---|---|---|---|---|---|---|---|---|
| A 127 | 2 | J4-X* | 30N | | 4 | K15-14 | 16N | 11 | 13 |
| A 128 | 2 | J4-Y* | 30N | | 4 | K15-18 | 16N | 11 | 13 |
| A 129 | 2 | J4-AA | 30N | | 4 | K15-22 | 16N | 11 | 13 |
| A 130 | 2 | J4-BB | 30N | | 4 | K13- 2 | 16N | 11 | 25 |
| A 131 | 2 | J4-CC | 30N | | 4 | K13- 4 | 16N | 11 | 25 |
| A 132 | 2 | J4-DD | 30N | | 4 | K13- 6 | 16N | 11 | 25 |
| A 133 | 2 | J4-EE | 30N | | 4 | K13-10 | 16N | 11 | 25 |
| A 134 | 2 | J4-FF | 30N | | 4 | K13-12 | 16N | 11 | 25 |
| A 135 | 2 | J4-GG | 30N | | 4 | K13-14 | 16N | 11 | 25 |
| A 136 | 2 | J4-HH | 30N | | 4 | K13-18 | 16N | 11 | 25 |
| A 137 | 2 | J4-JJ | 30N | | 4 | K13-20 | 16N | 11 | 25 |
| A 138 | 2 | J4-KK | 30N | | 4 | K13-22 | 16N | 11 | 25 |
| A 139 | 2 | J4-LL | 30N | | 4 | K16-14 | 16N | 11 | 24 |
| A 140 | 2 | J4-MM | 30N | | 4 | K16-16 | 16N | 11 | 24 |
| A 141 | 2 | J4-Z* | 30N | | 4 | K15-20 | 16N | 11 | 13 |
| A 142 | 2 | J4-NN | 30N | | 4 | K16-18 | 16N | 11 | 24 |
| A 143 | 2 | J4-PP | 30N | | 4 | K16-20 | 16N | 11 | 24 |
| A 144 | 2 | J5-A | 30N | | 7 | K1- 1 | 16N | 11 | 29 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GED WIRING HARNESS A 1900094

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TERMINATION SPEC ITEM NO. | NO. | TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 145 | 2 | J5-B | 30N | | 7 | K1- 3 | 16N | 11 | 29 |
| A 146 | 2 | J5-C | 30N | | 7 | K1- 5 | 16N | 11 | 29 |
| A 147 | 2 | J5-D | 30N | | 7 | K1- 7 | 16N | 11 | 29 |
| A 148 | 2 | J5-E | 30N | | 7 | K1- 9 | 16N | 11 | 29 |
| A 149 | 2 | J5-F | 30N | | 7 | K1-11 | 16N | 11 | 29 |
| A 150 | 2 | J5-G | 30N | | 7 | K1-13 | 16N | 11 | 29 |
| A 151 | 2 | J5-H | 30N | | 7 | K1-15 | 16N | 11 | 29 |
| A 152 | 2 | J5-J | 30N | | 7 | K1-17 | 16N | 11 | 29 |
| A 153 | 2 | J5-K | 30N | | 7 | K10-11 | 16N | 11 | 26 |
| A 154 | 2 | J5-L | 30N | | 7 | K1-19 | 16N | 11 | 29 |
| A 155 | 2 | J5-M | 30N | | 7 | K1-21 | 16N | 11 | 29 |
| A 156 | 2 | J5-N | 30N | | 7 | K1-23 | 16N | 11 | 29 |
| A 157 | 2 | J5-P | 30N | | 7 | K2- 1 | 16N | 11 | 19 |
| A 158 | 2 | J5-R | 30N | | 7 | K2- 3 | 16N | 11 | 19 |
| A 159 | 2 | J5-S | 30N | | 7 | K2- 5 | 16N | 11 | 19 |
| A 160 | 2 | J5-T | 30N | | 7 | K2- 7 | 16N | 11 | 19 |
| A 161 | 2 | J5-U | 30N | | 7 | K2- 9 | 16N | 11 | 19 |
| A 162 | 2 | J5-V | 30N | | 7 | K2-11 | 16N | 11 | 19 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GED WIRING HARNESS A C 1900094

| CONDUCTOR | | FROM | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH NUMBER | ITEM NO. | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | | TERMINATION SPEC. ITEM NO. | NO. | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | | TERMINATION SPEC ITEM NO. | NO. |
| A 163 | 2 | J5-W | 30N | | 7 | K2-13 | 16N | 11 | 18 |
| A 164 | 2 | J5-X | 30N | | 7 | K10-13 | 16N | 11 | 26 |
| A 165 | 2 | J5-Y | 30N | | 7 | K2-15 | 16N | 11 | 18 |
| A 166 | 2 | J5-Z | 30N | | 7 | K2-17 | 16N | 11 | 18 |
| A 167 | 2 | J5-A* | 30N | | 7 | K2-19 | 16N | 11 | 18 |
| A 168 | 2 | J5-B* | 30N | | 7 | K2-21 | 16N | 11 | 18 |
| A 169 | 2 | J5-C* | 30N | | 7 | K2-23 | 16N | 11 | 18 |
| A 170 | 2 | J5-D* | 30N | | 7 | K4- 1 | 16N | 11 | 28 |
| A 171 | 2 | J5-E* | 30N | | 7 | K4- 3 | 16N | 11 | 28 |
| A 172 | 2 | J5-F* | 30N | | 7 | K4- 5 | 16N | 11 | 28 |
| A 173 | 2 | J5-G* | 30N | | 7 | K4- 7 | 16N | 11 | 28 |
| A 174 | 2 | J5-H* | 30N | | 7 | K4- 9 | 16N | 11 | 28 |
| A 175 | 2 | J5-I* | 30N | | 7 | K10-15 | 16N | 11 | 26 |
| A 176 | 2 | J5-J* | 30N | | 7 | K4-11 | 16N | 11 | 28 |
| A 177 | 2 | J5-K* | 30N | | 7 | K4-13 | 16N | 11 | 28 |
| A 178 | 2 | J5-M* | 30N | | 7 | K4-15 | 16N | 11 | 28 |
| A 179 | 2 | J5-N* | 30N | | 7 | K4-17 | 16N | 11 | 28 |
| A 180 | 2 | J5-P* | 30N | | 7 | K4-19 | 16N | 11 | 28 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900094

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GED WIRING HARNESS A C 1900094

| CONDUCTOR | | FROM | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH NUMBER | ITEM NO. | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | | TERMINATION SPEC. ITEM NO. | NO. | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | | TERMINATION SPEC ITEM NO. | NO. |
| A 181 | 2 | J5-Q* | 30N | | 7 | K4-21 | 16N | 11 | 28 |
| A 182 | 2 | J5-R* | 30N | | 7 | K4-23 | 16N | 11 | 28 |
| A 183 | 2 | J5-S* | 30N | | 7 | K5- 1 | 16N | 11 | 20 |
| A 184 | 2 | J5-T* | 30N | | 7 | K5- 3 | 16N | 11 | 20 |
| A 185 | 2 | J5-U* | 30N | | 7 | K5- 5 | 16N | 11 | 20 |
| A 186 | 2 | J5-V* | 30N | | 7 | K11-13 | 16N | 11 | 18 |
| A 187 | 2 | J5-W* | 30N | | 7 | K5- 7 | 16N | 11 | 20 |
| A 188 | 2 | J5-X* | 30N | | 7 | K5- 9 | 16N | 11 | 20 |
| A 189 | 2 | J5-Y* | 30N | | 7 | K5-11 | 16N | 11 | 20 |
| A 190 | 2 | J5-Z* | 30N | | 7 | K5-13 | 16N | 11 | 17 |
| A 191 | 2 | J5-AA | 30N | | 7 | K5-15 | 16N | 11 | 17 |
| A 192 | 2 | J5-BB | 30N | | 7 | K5-17 | 16N | 11 | 17 |
| A 193 | 2 | J5-CC | 30N | | 7 | K5-19 | 16N | 11 | 17 |
| A 194 | 2 | J5-DD | 30N | | 7 | K5-21 | 16N | 11 | 17 |
| A 195 | 2 | J5-EE | 30N | | 7 | K5-23 | 16N | 11 | 17 |
| A 196 | 2 | J5-FF | 30N | | 7 | K3- 1 | 16N | 11 | 9 |
| A 197 | 2 | J5-GG | 30N | | 7 | K16- 9 | 16N | 11 | 24 |
| A 198 | 2 | J5-HH | 30N | | 7 | K3- 3 | 16N | 11 | 9 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900094

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GED WIRING HARNESS A C 1900094

| CONDUCTOR | | FROM | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH NUMBER | ITEM NO. | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | | TERMINATION SPEC. ITEM NO. | NO. | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | | TERMINATION SPEC ITEM NO. | NO |
| A 199 | 2 | J6-F | 30N | | 6 | K3-11 | 16N | 11 | 9 |
| A 200 | 2 | J6-E | 30N | | 6 | K3-13 | 16N | 11 | 9 |
| A 201 | 2 | J6-D | 30N | | 6 | K3-15 | 16N | 11 | 9 |
| A 202 | 2 | J6-C | 30N | | 6 | K11-15 | 16N | 11 | 15 |
| A 203 | 2 | J6-G | 30N | | 6 | K3-17 | 16N | 11 | 9 |
| A 204 | 2 | J6-H | 30N | | 6 | K3-19 | 16N | 11 | 9 |
| A 205 | 2 | J6-J | 30N | | 6 | K3-21 | 16N | 11 | 9 |
| A 206 | 2 | J6-K | 30N | | 6 | K3-23 | 16N | 11 | 9 |
| A 207 | 2 | J6-L | 30N | | 6 | K16-11 | 16N | 11 | 24 |
| A 208 | 2 | J6-M | 30N | | 6 | K6- 1 | 16N | 11 | 10 |
| A 209 | 2 | J6-N | 30N | | 6 | K6- 3 | 16N | 11 | 10 |
| A 210 | 2 | J6-P | 30N | | 6 | K6- 5 | 16N | 11 | 10 |
| A 211 | 2 | J6-R | 30N | | 6 | K6- 7 | 16N | 11 | 10 |
| A 212 | 2 | J6-S | 30N | | 6 | K11-17 | 16N | 11 | 15 |
| A 213 | 2 | J6-T | 30N | | 6 | K6- 9 | 16N | 11 | 10 |
| A 214 | 2 | J6-U | 30N | | 6 | K6-11 | 16N | 11 | 10 |
| A 215 | 2 | J6-V | 30N | | 6 | K6-13 | 16N | 11 | 10 |
| A 216 | 2 | J6-W | 30N | | 6 | K6-15 | 16N | 11 | 10 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900094

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GED WIRING HARNESS A C 1900094

| CONDUCTOR | | FROM | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH NUMBER | ITEM NO. | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | | TERMINATION SPEC. ITEM NO. | NO. | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | | TERMINATION SPEC ITEM NO. | NO. |
| A 217 | 2 | J6-Y | 30N | | 6 | K6-17 | 16N | 11 | 10 |
| A 218 | 2 | J6-Z | 30N | | 6 | K6-19 | 16N | 11 | 10 |
| A 219 | 2 | J6-A* | 30N | | 6 | K6-21 | 16N | 11 | 10 |
| A 220 | 2 | J6-B* | 30N | | 6 | K6-23 | 16N | 11 | 10 |
| A 221 | 2 | J6-D* | 30N | | 6 | K9- 1 | 16N | 11 | 11 |
| A 222 | 2 | J6-E* | 30N | | 6 | K9- 3 | 16N | 11 | 11 |
| A 223 | 2 | J6-F* | 30N | | 6 | K9- 5 | 16N | 11 | 11 |
| A 224 | 2 | J6-G* | 30N | | 6 | K9- 7 | 16N | 11 | 11 |
| A 225 | 2 | J6-I* | 30N | | 6 | K9- 9 | 16N | 11 | 11 |
| A 226 | 2 | J6-J* | 30N | | 6 | K9-11 | 16N | 11 | 11 |
| A 227 | 2 | J6-K* | 30N | | 6 | K9-13 | 16N | 11 | 11 |
| A 228 | 2 | J6-M* | 30N | | 6 | K9-15 | 16N | 11 | 11 |
| A 229 | 2 | J6-P* | 30N | | 6 | K9-17 | 16N | 11 | 11 |
| A 230 | 2 | J6-Q* | 30N | | 6 | K9-19 | 16N | 11 | 11 |
| A 231 | 2 | J6-R* | 30N | | 6 | K9-21 | 16N | 11 | 11 |
| A 232 | 2 | J6-S* | 30N | | 6 | K9-23 | 16N | 11 | 11 |
| A 233 | 2 | J6-T* | 30N | | 6 | K11-19 | 16N | 11 | 15 |
| A 234 | 1 | P1-A | 30N | | 5 | E1 | 30Y | | 8 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

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| CONDUCTOR INDIVIDUAL LENGTH | | FROM | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | | TERMINATION SPEC. ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | | TERMINATION SPEC ITEM NO. | NO. |
| A 235 | 2 | K1- 1 | 16N | 11 | 29 | K7- 1 | 16N | 11 | 27 |
| A 236 | 2 | K1- 3 | 16N | 11 | 29 | K7- 3 | 16N | 11 | 27 |
| A 237 | 2 | K1- 5 | 16N | 11 | 29 | K7- 5 | 16N | 11 | 27 |
| A 238 | 2 | K1- 7 | 16N | 11 | 29 | K7- 7 | 16N | 11 | 27 |
| A 239 | 2 | K1- 9 | 16N | 11 | 29 | K7- 9 | 16N | 11 | 27 |
| A 240 | 2 | K1-11 | 16N | 11 | 29 | K7-11 | 16N | 11 | 27 |
| A 241 | 2 | K1-13 | 16N | 11 | 29 | K7-13 | 16N | 11 | 27 |
| A 242 | 2 | K1-15 | 16N | 11 | 29 | K7-15 | 16N | 11 | 27 |
| A 243 | 2 | K1-17 | 16N | 11 | 29 | K7-17 | 16N | 11 | 27 |
| A 244 | 2 | K1-19 | 16N | 11 | 29 | K7-19 | 16N | 11 | 27 |
| A 245 | 2 | K1-21 | 16N | 11 | 29 | K7-21 | 16N | 11 | 27 |
| A 246 | 2 | K1-23 | 16N | 11 | 29 | K7-23 | 16N | 11 | 27 |
| A 247 | 2 | K2- 1 | 16N | 11 | 19 | K8- 1 | 16N | 11 | 21 |
| A 248 | 2 | K2- 3 | 16N | 11 | 19 | K8- 3 | 16N | 11 | 21 |
| A 249 | 2 | K2- 5 | 16N | 11 | 19 | K8- 5 | 16N | 11 | 21 |
| A 250 | 2 | K2- 7 | 16N | 11 | 19 | K8- 7 | 16N | 11 | 21 |
| A 251 | 2 | K2- 9 | 16N | 11 | 19 | K8- 9 | 16N | 11 | 21 |
| A 252 | 2 | K2-11 | 16N | 11 | 19 | K8-11 | 16N | 11 | 21 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

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GED WIRING HARNESS A C 1900094

| CONDUCTOR INDIVIDUAL LENGTH | | FROM | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | | TERMINATION SPEC. ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | | TERMINATION SPEC ITEM NO. | NO. |
| A 253 | 2 | K2-13 | 16N | 11 | 18 | K8-13 | 16N | 11 | 16 |
| A 254 | 2 | K2-17 | 16N | 11 | 18 | K8-17 | 16N | 11 | 16 |
| A 255 | 2 | K2-19 | 16N | 11 | 18 | K8-19 | 16N | 11 | 16 |
| A 256 | 2 | K2-21 | 16N | 11 | 18 | K8-21 | 16N | 11 | 16 |
| A 257 | 2 | K2-23 | 16N | 11 | 18 | K8-23 | 16N | 11 | 16 |
| A 258 | 2 | K3- 1 | 16N | 11 | 9 | K11- 9 | 16N | 11 | 22 |
| A 259 | 2 | K4-11 | 16N | 11 | 28 | K11-11 | 16N | 11 | 22 |
| A 260 | 2 | K3-11 | 16N | 11 | 9 | K16-19 | 16N | 11 | 24 |
| A 261 | 2 | K3- 9 | 16N | 11 | 9 | K11-21 | 16N | 11 | 15 |
| A 262 | 2 | K3-15 | 16N | 11 | 9 | K8-15 | 16N | 11 | 16 |
| A 263 | 2 | K3-17 | 16N | 11 | 9 | K12- 1 | 16N | 11 | 12 |
| A 264 | 2 | K3-19 | 16N | 11 | 9 | K12- 3 | 16N | 11 | 12 |
| A 265 | 2 | K3-21 | 16N | 11 | 9 | K12- 5 | 16N | 11 | 12 |
| A 266 | 2 | K3-23 | 16N | 11 | 9 | K12- 7 | 16N | 11 | 12 |
| A 267 | 2 | K4- 1 | 16N | 11 | 28 | K10- 1 | 16N | 11 | 26 |
| A 268 | 2 | K4- 3 | 16N | 11 | 28 | K10- 3 | 16N | 11 | 26 |
| A 269 | 2 | K4- 5 | 16N | 11 | 28 | K10- 5 | 16N | 11 | 26 |
| A 270 | 2 | K4- 7 | 16N | 11 | 28 | K10- 7 | 16N | 11 | 26 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

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GED WIRING HARNESS A C 1900094

| CONDUCTOR INDIVIDUAL LENGTH | | FROM | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | | TERMINATION SPEC. ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | | TERMINATION SPEC ITEM NO. | NO. |
| A 271 | 2 | K4- 9 | 16N | 11 | 28 | K10- 9 | 16N | 11 | 26 |
| A 272 | 2 | K5- 9 | 16N | 11 | 20 | K10-17 | 16N | 11 | 26 |
| A 273 | 2 | K5-11 | 16N | 11 | 20 | K10-19 | 16N | 11 | 26 |
| A 274 | 2 | K5-13 | 16N | 11 | 17 | K10-21 | 16N | 11 | 26 |
| A 275 | 2 | K5-15 | 16N | 11 | 17 | K10-23 | 16N | 11 | 26 |
| A 276 | 2 | K5-17 | 16N | 11 | 17 | K11- 1 | 16N | 11 | 22 |
| A 277 | 2 | K5-19 | 16N | 11 | 17 | K11- 3 | 16N | 11 | 22 |
| A 278 | 2 | K5-21 | 16N | 11 | 17 | K11- 5 | 16N | 11 | 22 |
| A 279 | 2 | K5-23 | 16N | 11 | 17 | K11- 9 | 16N | 11 | 22 |
| A 280 | 2 | K6- 1 | 16N | 11 | 10 | K15- 1 | 16N | 11 | 13 |
| A 281 | 2 | K6- 3 | 16N | 11 | 10 | K15- 3 | 16N | 11 | 13 |
| A 282 | 2 | K6- 5 | 16N | 11 | 10 | K15- 5 | 16N | 11 | 13 |
| A 283 | 2 | K6- 7 | 16N | 11 | 10 | K15- 7 | 16N | 11 | 13 |
| A 284 | 2 | K6- 9 | 16N | 11 | 10 | K12- 9 | 16N | 11 | 12 |
| A 285 | 2 | K6-11 | 16N | 11 | 10 | K12-11 | 16N | 11 | 12 |
| A 286 | 2 | K6-13 | 16N | 11 | 10 | K12-13 | 16N | 11 | 12 |
| A 287 | 2 | K6-15 | 16N | 11 | 10 | K12-15 | 16N | 11 | 12 |
| A 288 | 2 | K6-17 | 16N | 11 | 10 | K12-17 | 16N | 11 | 12 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GED WIRING HARNESS A C 1900094

| CONDUCTOR INDIVIDUAL LENGTH | | FROM | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | | TERMINATION SPEC. ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | | TERMINATION SPEC ITEM NO. | NO. |
| A 289 | 2 | K6-19 | 16N | 11 | 10 | K12-19 | 16N | 11 | 12 |
| A 290 | 2 | K6-21 | 16N | 11 | 10 | K12-21 | 16N | 11 | 12 |
| A 291 | 2 | K1-A | 16N | 11 | 29 | K4-A | 16N | 11 | 28 |
| A 292 | 2 | K2-A | 16N | 11 | 18 | K1-A | 16N | 11 | 29 |
| A 293 | 2 | K2-B | 16N | 11 | 18 | K1-B | 16N | 11 | 29 |
| A 294 | 2 | K1-B | 16N | 11 | 29 | K4-B | 16N | 11 | 28 |
| A 295 | 2 | K2-A | 16N | 11 | 18 | K3-A | 16N | 11 | 9 |
| A 296 | 2 | K2-B | 16N | 11 | 18 | K3-B | 16N | 11 | 9 |
| A 297 | 2 | K4-A | 16N | 11 | 28 | K5-A | 16N | 11 | 17 |
| A 298 | 2 | K4-B | 16N | 11 | 28 | K5-B | 16N | 11 | 17 |
| A 299 | 2 | K6-A | 16N | 11 | 10 | K5-A | 16N | 11 | 17 |
| A 300 | 2 | K6-B | 16N | 11 | 10 | K5-B | 16N | 11 | 17 |
| A 301 | 2 | K6-A | 16N | 11 | 10 | K9-A | 16N | 11 | 11 |
| A 302 | 2 | K6-B | 16N | 11 | 10 | K9-B | 16N | 11 | 11 |
| A 303 | 2 | K6-23 | 16N | 11 | 10 | K12-23 | 16N | 11 | 12 |
| A 304 | 2 | K8-B | 16N | 11 | 16 | K9-B | 16N | 11 | 11 |
| A 305 | 2 | K7-A | 16N | 11 | 27 | K10-A | 16N | 11 | 26 |
| A 306 | 2 | K8-A | 16N | 11 | 16 | K7-A | 16N | 11 | 27 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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HOUSTON TEXAS

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SCALE - NONE REV LTR C SHEET 21 OF 26

GED WIRING HARNESS A C 1900094

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | FROM STRIP WIRE OR JACKET | FROM TERMINATION SPEC. ITEM NO. | FROM NO. | TO CIRCUIT POINT | TO STRIP WIRE OR JACKET | TO TERMINATION SPEC. ITEM NO. | TO NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 307 | 2 | K8-B | 16N | 11 | 16 | K7-B | 16N | 11 | 27 |
| A 308 | 2 | K7-B | 16N | 11 | 27 | K10-B | 16N | 11 | 26 |
| A 309 | 2 | K15-23 | 16N | 11 | 13 | K12-23 | 16N | 11 | 12 |
| A 310 | 2 | K8-15 | 16N | 11 | 16 | K16-17 | 16N | 11 | 24 |
| A 311 | 2 | K9- 1 | 16N | 11 | 11 | K14- 1 | 16N | 11 | 23 |
| A 312 | 2 | K9- 3 | 16N | 11 | 11 | K14- 3 | 16N | 11 | 23 |
| A 313 | 2 | K9- 5 | 16N | 11 | 11 | K14- 5 | 16N | 11 | 23 |
| A 314 | 2 | K9- 7 | 16N | 11 | 11 | K14- 7 | 16N | 11 | 23 |
| A 315 | 2 | K9- 9 | 16N | 11 | 11 | K14- 9 | 16N | 11 | 23 |
| A 316 | 2 | K9-11 | 16N | 11 | 11 | K14-11 | 16N | 11 | 23 |
| A 317 | 2 | K9-13 | 16N | 11 | 11 | K14-13 | 16N | 11 | 14 |
| A 318 | 2 | K9-15 | 16N | 11 | 11 | K14-15 | 16N | 11 | 14 |
| A 319 | 2 | K9-17 | 16N | 11 | 11 | K13-17 | 16N | 11 | 25 |
| A 320 | 2 | K9-19 | 16N | 11 | 11 | K13-19 | 16N | 11 | 25 |
| A 321 | 2 | K9-21 | 16N | 11 | 11 | K13-21 | 16N | 11 | 25 |
| A 322 | 2 | K9-23 | 16N | 11 | 11 | K13-23 | 16N | 11 | 25 |
| A 323 | 2 | K10-11 | 16N | 11 | 26 | K16- 1 | 16N | 11 | 24 |
| A 324 | 2 | K10-13 | 16N | 11 | 26 | K16- 3 | 16N | 11 | 24 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GED WIRING HARNESS A C 1900094

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | FROM STRIP WIRE OR JACKET | FROM TERMINATION SPEC. ITEM NO. | FROM NO. | TO CIRCUIT POINT | TO STRIP WIRE OR JACKET | TO TERMINATION SPEC. ITEM NO. | TO NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 325 | 2 | K10-15 | 16N | 11 | 26 | K16- 5 | 16N | 11 | 24 |
| A 326 | 2 | K11-A | 16N | 11 | 15 | K10-A | 16N | 11 | 26 |
| A 327 | 2 | K11-B | 16N | 11 | 15 | K10-B | 16N | 11 | 26 |
| A 328 | 2 | K11-11 | 16N | 11 | 22 | K16-13 | 16N | 11 | 24 |
| A 329 | 2 | K11-13 | 16N | 11 | 19 | K16- 7 | 16N | 11 | 24 |
| A 330 | 2 | K11-23 | 16N | 11 | 15 | K16-15 | 16N | 11 | 24 |
| A 331 | 2 | K11-10 | 16N | 11 | 22 | K12- 8 | 16N | 11 | 12 |
| A 332 | 2 | K11-A | 16N | 11 | 15 | K12-A | 16N | 11 | 12 |
| A 333 | 2 | K11-B | 16N | 11 | 15 | K12-B | 16N | 11 | 12 |
| A 334 | 2 | K12- 9 | 16N | 11 | 12 | K15- 9 | 16N | 11 | 13 |
| A 335 | 2 | K12-11 | 16N | 11 | 12 | K15-11 | 16N | 11 | 13 |
| A 336 | 2 | K12-13 | 16N | 11 | 12 | K15-13 | 16N | 11 | 13 |
| A 337 | 2 | K12-15 | 16N | 11 | 12 | K15-15 | 16N | 11 | 13 |
| A 338 | 2 | K12-17 | 16N | 11 | 12 | K15-17 | 16N | 11 | 13 |
| A 339 | 2 | K12-19 | 16N | 11 | 12 | K15-19 | 16N | 11 | 13 |
| A 340 | 2 | K12-21 | 16N | 11 | 12 | K15-21 | 16N | 11 | 13 |
| A 341 | 2 | K14-A | 16N | 11 | 14 | K12-A | 16N | 11 | 12 |
| A 342 | 2 | K15-B | 16N | 11 | 13 | K12-B | 16N | 11 | 12 |

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GED WIRING HARNESS A C 1900094

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | FROM STRIP WIRE OR JACKET | FROM TERMINATION SPEC. ITEM NO. | FROM NO. | TO CIRCUIT POINT | TO STRIP WIRE OR JACKET | TO TERMINATION SPEC. ITEM NO. | TO NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 343 | 2 | K14- 1 | 16N | 11 | 23 | K13- 1 | 16N | 11 | 25 |
| A 344 | 2 | K14- 3 | 16N | 11 | 23 | K13- 3 | 16N | 11 | 25 |
| A 345 | 2 | K14- 5 | 16N | 11 | 23 | K13- 5 | 16N | 11 | 25 |
| A 346 | 2 | K14- 7 | 16N | 11 | 23 | K13- 7 | 16N | 11 | 25 |
| A 347 | 2 | K14- 9 | 16N | 11 | 23 | K13- 9 | 16N | 11 | 25 |
| A 348 | 2 | K14-11 | 16N | 11 | 23 | K13-11 | 16N | 11 | 25 |
| A 349 | 2 | K14-13 | 16N | 11 | 14 | K13-13 | 16N | 11 | 25 |
| A 350 | 2 | K14-15 | 16N | 11 | 14 | K13-15 | 16N | 11 | 25 |
| A 351 | 2 | K14-B | 16N | 11 | 14 | K15-B | 16N | 11 | 13 |
| A 352 | 2 | K14-B | 16N | 11 | 14 | K13-B | 16N | 11 | 25 |
| A 353 | 2 | K13- 8 | 16N | 11 | 25 | K15- 8 | 16N | 11 | 13 |
| A 354 | 2 | K13-A | 16N | 11 | 25 | K15-A | 16N | 11 | 13 |
| A 355 | 2 | K13-24 | 16N | 11 | 25 | K16-16 | 16N | 11 | 24 |
| A 356 | 2 | K13-A | 16N | 11 | 25 | K16-A | 16N | 11 | 24 |
| A 357 | 2 | K13-B | 16N | 11 | 25 | K16-B | 16N | 11 | 24 |
| A 358 | 2 | K2-15 | 16N | 11 | 18 | K14-23 | 16N | 11 | 14 |
| A 359 | 2 | K2-16 | 16N | 11 | 18 | K14-24 | 16N | 11 | 14 |
| A 360 | 2 | K3-10 | 16N | 11 | 9 | K11-24 | 16N | 11 | 15 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
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GED WIRING HARNESS A C 1900094

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | FROM STRIP WIRE OR JACKET | FROM TERMINATION SPEC. ITEM NO. | FROM NO. | TO CIRCUIT POINT | TO STRIP WIRE OR JACKET | TO TERMINATION SPEC. ITEM NO. | TO NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 361 | 2 | J6-A | 30N |  | 6 | K3- 7 | 16N | 11 | 9 |
| A 362 | 2 | U2-Q* | 30N |  | 2 | K3- 8 | 16N | 11 | 9 |
| A 363 | 2 | J3-S* | 30N |  | 5 | K14-18 | 16N | 11 | 14 |
| A 364 | 2 | K14-17 | 16N | 11 | 14 | K16-19 | 16N | 11 | 24 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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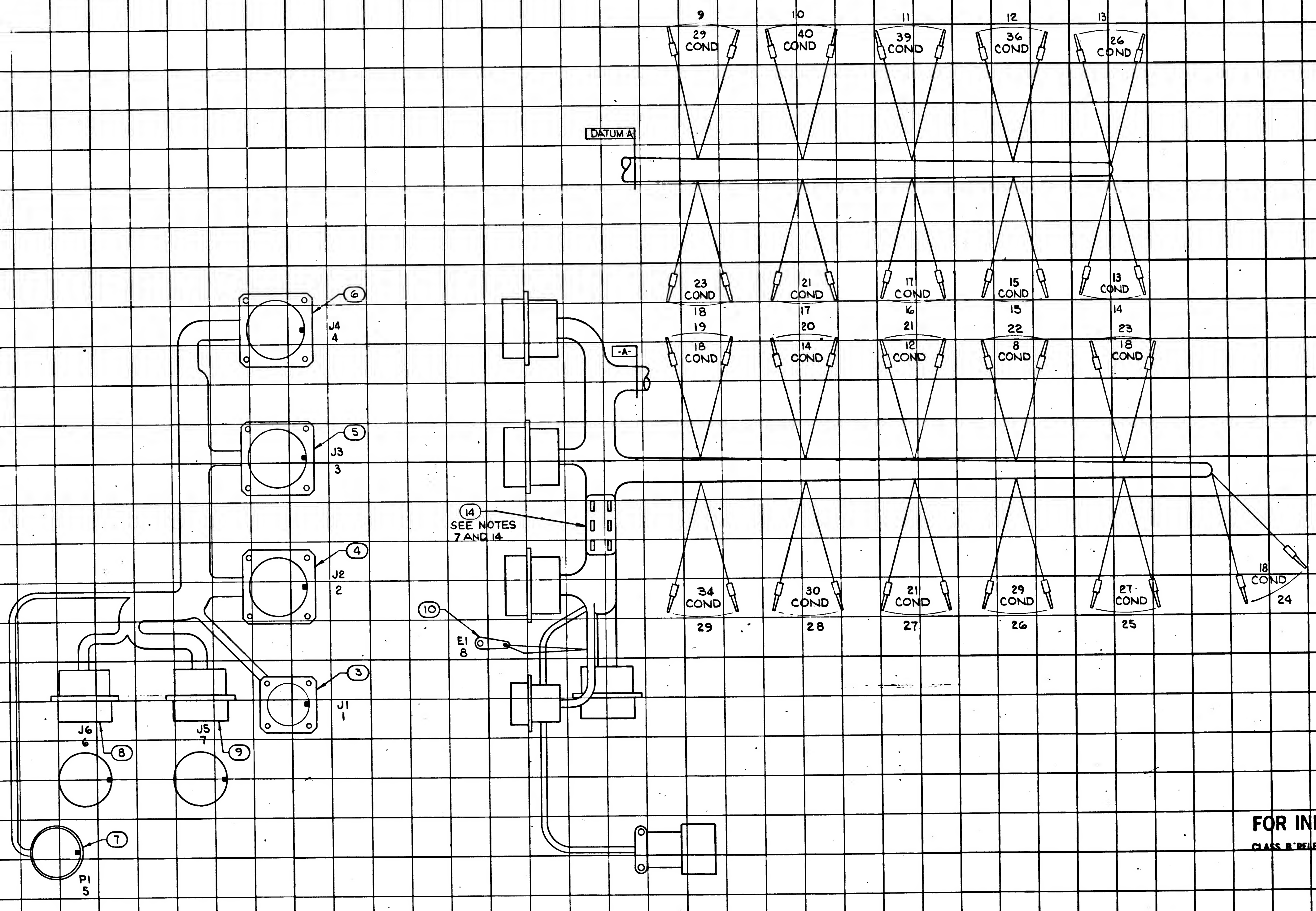
1900094

| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD. |
|---|---|---|---|---|---|
|  |  | CHANGE IN ACCORDANCE WITH CM 196233 | — | 21 MAY 64 | EM |



FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 03597 DATE 10/15/63

1900094 C

NEXT ASSY | USED ON
APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ − + − + −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN S. Agne DATE 21 AUG 63
M. MANNING 19 SEP 63
CHECKED
APPROVAL H. Williams 19 SEP 63
APPROVAL
NASA APPROVAL
MIT APPROVAL 15 Oct 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS "A"

CODE IDENT NO. | SIZE E | 1900094
SCALE FULL
SHEET 26 OF 26

| APPLICATION | |
|---|---|
| NEXT ASSY | USED ON |
| 1900052-011 | 1900052-011 |

| REVISIONS | | | |
|---|---|---|---|
| SYM | DESCRIPTION | DATE | APPROVAL |
| A | CHANGE IN ACCORDANCE WITH MXC 190756 TDRR 09712 | 25 OCT 63 | WSM / Om |
| B | CHANGE IN ACCORDANCE WITH MXC 191671 TDRR 09713 | 21 NOV 63 | EL / Om |
| Ⓜ C | CHANGE IN ACCORDANCE WITH CM 196233 TDRR 09714 | 21 MAY 64 | EM / W.D. |
| D | REVISED PER TDRR NO. 10755 | 29 JUL 64 | JJJ / MEM |
| E | REVISED PER TDRR 14158 | 19 NOV 64 | JWP / W.D. |

# FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 03897 DATE 10/15/62

| | | | |
|---|---|---|---|
| REV | C | C | C |
| SHEET | 24 | 25 | 26 |

| REV STATUS OF SHEETS | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| REV | E | C | C | C | C | C | C | D | C | C | C | C | C | C | C | C | C | C | C | C | C | C | E |
| SHEET | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

ACSP PN

DRAWN S. Agne DATE 21 AUG 63
CHECKED M. MANNING 19 SEP 63
APPROVAL Williams 19 SEP 63
APPROVAL Johnson 10/11/63

NASA APPROVAL 10/15/63
MIT APPROVAL

CONTRACT

## WIRING HARNESS A

CODE IDENT NO.

SIZE

1900094

REV E

SCALE

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PENNANT NOTE

GENERAL NOTES

1 SEE CONDUCTOR CHART, PENNANT NOTE 1.

2 SEE CONDUCTOR CHART, PENNANT NOTE 2.

3 MARK CONDUCTOR IDENTIFICATION PER ND1002019.

4 SPACING OF CONDUCTOR IDENTIFICATION SHALL BE EVERY 1.2 INCHES.

5 SPIRALLING OF THE MARKING IS ALLOWED.

6 LACE HARNESS USING ITEM 15.

7 IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (ES-267).

8 SOLDER PER MIL-STD-440 USING ITEMS 12 AND 13.

9 Y OR N IN TINNED COLUMN INDICATES YES OR NO.

10 A LETTER WITH AN ASTERISK SUFFIX, INDICATES A LOWER CASE LETTER.

11 GRID MODULE IS 1 INCH.

12 VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.

13 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

14 FASTEN MARKER SECURELY WITH ITEM 15. WRAP MARKER TO CONFORM TO CABLE CONFIGURATION.

15 UNLESS OTHERWISE SPECIFIED --- FEATURE CENTERLINES ARE LOCATED WITHIN + OR - .25 INCH. END OF HOOKUP WIRES OR ACESSORIES ARE LOCATED WITHIN + OR - .12 INCH.

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SCALE - NONE REV LTR C SHEET 2 OF 26

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PENNANT NOTE

GENERAL NOTES

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

| APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD. | TOLERANCE WIRE OR CABLE | STRIP WIRE | STRIP JACKET | CUT WIRE | CUT SHIELD |
|---|---|---|---|---|---|
| UNDER 1 INCH | + .06-.00 | +.03-.00 | +.06-.06 | +.06-.06 | +.06-.06 |
| 1 INCH TO 6 INCHES | + .50-.00 | +.06-.00 | +.25-.25 | +.25-.25 | +.25-.25 |
| 6 INCHES TO 6 FEET | +1.00-.00 | | +.50-.50 | +.50-.50 | +.50-.50 |
| OVER 6 FEET | +2.00-.00 | | | | |

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LIST OF MATERIALS

| PENNANT NOTE | ITEM | QTY | PART NO | DESCRIPTION |
|---|---|---|---|---|
| | 1 | 1 | 1900094-001 | WIRE PER ND1002181 TYPE 1, CLASS 1, 20AWG, WHT, 8.5 FT TOTAL LENGTH |
| | 2 | 1 | 1900094-002 | WIRE PER ND1002181 TYPE 1, CLASS 1, 24AWG, WHT, 561 FT TOTAL LENGTH |
| | 3 | 1 | MS-3127E-16-8PW (1897049-081) | CONNECTOR, RECEPTACLE |
| | 4 | 1 | MS-3127E-24-61P (1897055-610) | CONNECTOR, RECEPTACLE |
| | 5 | 1 | MS-3127E-24-61PW (1897055-611) | CONNECTOR, RECEPTACLE |
| | 6 | 1 | MS-3127E-24-61PX (1897055-612) | CONNECTOR, RECEPTACLE |
| | 7 | 1 | MS-3126F-16-8S (1897042-080) | CONNECTOR, PLUG |
| | 8 | 1 | MS-3127E-20-41S (1897052-410) | CONNECTOR, RECEPTACLE |
| | 9 | 1 | MS-3127E-22-55S (1897054-550) | CONNECTOR, RECEPTACLE |
| | 10 | 1 | MS35431-4 | TERMINAL LUG |
| 12 | 11 | 488 | 1015949-002 | TERMINAL PIN |
| | 12 | AR | QQ-S-571 | SOLDER SN60 (ES-2175 ALLOY 1) |
| | 13 | AR | QQ-S-571 | FLUX MIL-F-14256 (ES-2798) OR FLUX TYPE AR (ES-2175 TYPE 1 OR 2) |
| 12 | 14 | 1 | 1016128-001 | BAND-IDENTIFICATION |
| | 15 | AR | MIL-T-713 | LACING TAPE TYPE P, CLASS 2 BLACK (ES-2732 NO. 18) |

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| CONDUCTOR NUMBER | CONDUCTOR ITEM NO. | FROM CIRCUIT POINT | FROM STRIP WIRE OR JACKET 2> | FROM TIN | FROM TERMINATION SPEC. 1> ITEM NO. | FROM NO. | TO CIRCUIT POINT | TO STRIP WIRE OR JACKET 2> | TO TIN | TO TERMINATION SPEC 1> ITEM NO. | TO NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A 1 | 1 | J1-A | 30 | N | | 1 | E1 | 30 | Y | | 8 |
| A 2 | 2 | J1-C | 30 | N | | 1 | K3-B | 16 | N | 11 | 9 |
| A 3 | 1 | J1-D | 30 | N | | 1 | P1-D | 30 | N | | 5 |
| A 4 | 1 | J1-E | 30 | N | | 1 | P1-E | 30 | N | | 5 |
| A 5 | 2 | J1-F | 30 | N | | 1 | K3-A | 16 | N | 11 | 9 |
| A 6 | 2 | J1-G | 30 | N | | 1 | K8-A | 16 | N | 11 | 16 |
| A 7 | 2 | J1-H | 30 | N | | 1 | K15-A | 16 | N | 11 | 13 |
| A 8 | 2 | J2-A | 30 | N | | 2 | K1- 2 | 16 | N | 11 | 29 |
| A 9 | 2 | J2-B | 30 | N | | 2 | K1- 4 | 16 | N | 11 | 29 |
| A 10 | 2 | J2-S | 30 | N | | 2 | K2-22 | 16 | N | 11 | 18 |
| A 11 | 2 | J2-T | 30 | N | | 2 | K2-24 | 16 | N | 11 | 18 |
| A 12 | 2 | J2-C | 30 | N | | 2 | K1-20 | 16 | N | 11 | 29 |
| A 13 | 2 | J2-D | 30 | N | | 2 | K1-22 | 16 | N | 11 | 29 |
| A 14 | 2 | J2-E | 30 | N | | 2 | K1-24 | 16 | N | 11 | 29 |
| A 15 | 2 | J2-F | 30 | N | | 2 | K2- 2 | 16 | N | 11 | 19 |
| A 16 | 2 | J2-G | 30 | N | | 2 | K2- 4 | 16 | N | 11 | 19 |
| A 17 | 2 | J2-H | 30 | N | | 2 | K2- 6 | 16 | N | 11 | 19 |
| A 18 | 2 | J2-J | 30 | N | | 2 | K2- 8 | 16 | N | 11 | 19 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GED WIRING HARNESS A C 1900094

| CONDUCTOR INDIVIDUAL LENGTH | | | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | FROM TERMINATION SPEC. 1> | | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | TO TERMINATION SPEC 1> | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2> | CIRCUIT POINT | 2> | TIN | ITEM NO. | NO. | CIRCUIT POINT | 2> | TIN | ITEM NO. | NO. |
| A 19 | 2 | | J2-K | 30 | N | | 2 | K2-10 | 16 | N | 11 | 19 |
| A 20 | 2 | | J2-L | 30 | N | | 2 | K2-12 | 16 | N | 11 | 19 |
| A 21 | 2 | | J2-M | 30 | N | | 2 | K2-14 | 16 | N | 11 | 18 |
| A 22 | 2 | | J2-N | 30 | N | | 2 | K2-16 | 16 | N | 11 | 18 |
| A 23 | 2 | | J2-P | 30 | N | | 2 | K2-18 | 16 | N | 11 | 18 |
| A 24 | 2 | | J2-R | 30 | N | | 2 | K2-20 | 16 | N | 11 | 18 |
| A 25 | 2 | | J2-U | 30 | N | | 2 | K4-12 | 16 | N | 11 | 28 |
| A 26 | 2 | | J2-V | 30 | N | | 2 | K4-14 | 16 | N | 11 | 28 |
| A 27 | 2 | | J2-W | 30 | N | | 2 | K4-16 | 16 | N | 11 | 28 |
| A 28 | 2 | | J2-X | 30 | N | | 2 | K4-18 | 16 | N | 11 | 28 |
| A 29 | 2 | | J2-Y | 30 | N | | 2 | K4-20 | 16 | N | 11 | 28 |
| A 30 | 2 | | J2-Z | 30 | N | | 2 | K4-22 | 16 | N | 11 | 28 |
| A 31 | 2 | | J2-A* | 30 | N | | 2 | K4-24 | 16 | N | 11 | 28 |
| A 32 | 2 | | J2-B* | 30 | N | | 2 | K5- 2 | 16 | N | 11 | 20 |
| A 33 | 2 | | J2-C* | 30 | N | | 2 | K5- 4 | 16 | N | 11 | 20 |
| A 34 | 2 | | J2-D*. | 30 | N | | 2 | K5- 6 | 16 | N | 11 | 20 |
| A 35 | 2 | | J2-E* | 30 | N | | 2 | K5- 8 | 16 | N | 11 | 20 |
| A 36 | 2 | | J2-F* | 30 | N | | 2 | K5-10 | 16 | N | 11 | 20 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR INDIVIDUAL LENGTH | | | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | FROM TERMINATION SPEC. 1> | | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | TO TERMINATION SPEC 1> | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2> | CIRCUIT POINT | 2> | TIN | ITEM NO. | NO. | CIRCUIT POINT | 2> | TIN | ITEM NO. | NO. |
| A 37 | 2 | | J2-G* | 30 | N | | 2 | K5-12 | 16 | N | 11 | 20 |
| A 38 | 2 | | J2-H* | 30 | N | | 2 | K5-14 | 16 | N | 11 | 17 |
| A 39 | 2 | | J2-I* | 30 | N | | 2 | K5-16 | 16 | N | 11 | 17 |
| A 40 | 2 | | J2-J* | 30 | N | | 2 | K5-18 | 16 | N | 11 | 17 |
| A 41 | 2 | | J2-K* | 30 | N | | 2 | K5-20 | 16 | N | 11 | 17 |
| A 42 | 2 | | J2-M* | 30 | N | | 2 | K5-22 | 16 | N | 11 | 17 |
| A 43 | 2 | | J2-N* | 30 | N | | 2 | K3- 4 | 16 | N | 11 | 9 |
| A 44 | 2 | | J2-P* | 30 | N | | 2 | K3-12 | 16 | N | 11 | 9 |
| A 45 | | | DELETED | | | | | | | | | |
| A 46 | 2 | | J2-R* | 30 | N | | 2 | K3-14 | 16 | N | 11 | 9 |
| A 47 | 2 | | J2-S* | 30 | N | | 2 | K3-16 | 16 | N | 11 | 9 |
| A 48 | 2 | | J2-T* | 30 | N | | 2 | K3-18 | 16 | N | 11 | 9 |
| A 49 | 2 | | J2-U* | 30 | N | | 2 | K6- 2 | 16 | N | 11 | 10 |
| A 50 | 2 | | J2-V* | 30 | N | | 2 | K6- 4 | 16 | N | 11 | 10 |
| A 51 | 2 | | J2-W* | 30 | N | | 2 | K6- 6 | 16 | N | 11 | 10 |
| A 52 | 2 | | J2-X* | 30 | N | | 2 | K6- 8 | 16 | N | 11 | 10 |
| A 53 | 2 | | J2-Y* | 30 | N | | 2 | K6-10 | 16 | N | 11 | 10 |
| A 54 | 2 | | J2-Z* | 30 | N | | 2 | K6-12 | 16 | N | 11 | 10 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GED WIRING HARNESS A ~~C~~ D 1900094

| CONDUCTOR INDIVIDUAL LENGTH | | | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | FROM TERMINATION SPEC. 1> | | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | TO TERMINATION SPEC 1> | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2> | CIRCUIT POINT | 2> | TIN | ITEM NO. | NO. | CIRCUIT POINT | 2> | TIN | ITEM NO. | NO. |
| A 55 | 2 | | J2-AA | 30 | N | | 2 | K6-14 | 16 | N | 11 | 10 |
| A 56 | 2 | | J2-BB | 30 | N | | 2 | K6-16 | 16 | N | 11 | 10 |
| A 57 | 2 | | J2-CC | 30 | N | | 2 | K6-18 | 16 | N | 11 | 10 |
| A 58 | 2 | | J2-DD | 30 | N | | 2 | K6-20 | 16 | N | 11 | 10 |
| A 59 | 2 | | J2-EE | 30 | N | | 2 | K6-22 | 16 | N | 11 | 10 |
| A 60 | 2 | | J2-FF | 30 | N | | 2 | K6-24 | 16 | N | 11 | 10 |
| A 61 | 2 | | J2-GG | 30 | N | | 2 | K9- 2 | 16 | N | 11 | 11 |
| A 62 | 2 | | J2-HH | 30 | N | | 2 | K9- 4 | 16 | N | 11 | 11 |
| A 63 | 2 | | J2-JJ | 30 | N | | 2 | K9- 6 | 16 | N | 11 | 11 |
| A 64 | 2 | | J2-KK | 30 | N | | 2 | K9- 8 | 16 | N | 11 | 11 |
| A 65 | 2 | | J2-LL | 30 | N | | 2 | K9-10 | 16 | N | 11 | 11 |
| A 66 | 2 | | J2-MM | 30 | N | | 2 | K9-12 | 16 | N | 11 | 11 |
| A 67 | 2 | | J2-NN | 30 | N | | 2 | K9-14 | 16 | N | 11 | 11 |
| A 68 | 2 | | J2-PP | 30 | N | | 2 | K9-16 | 16 | N | 11 | 11 |
| A 69 | 2 | | J3-N | 30 | N | | 3 | K7- 2 | 16 | N | 11 | 27 |
| A 70 | 2 | | J3-P | 30 | N | | 3 | K7- 4 | 16 | N | 11 | 27 |
| A 71 | 2 | | K1- 6 | 16 | N | 11 | 29 | K7-20 | 16 | N | 11 | 27 |
| A 72 | 2 | | J3-S | 30 | N | | 3 | K7-22 | 16 | N | 11 | 27 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GED WIRING HARNESS. A C 1900094

| CONDUCTOR INDIVIDUAL LENGTH | | | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | FROM TERMINATION SPEC. 1> | | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | TO TERMINATION SPEC 1> | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2> | CIRCUIT POINT | 2> | TIN | ITEM NO. | NO. | CIRCUIT POINT | 2> | TIN | ITEM NO. | NO. |
| A 73 | 2 | | J3-T | 30 | N | | 3 | K7-24 | 16 | N | 11 | 27 |
| A 74 | 2 | | J3-U | 30 | N | | 3 | K8- 2 | 16 | N | 11 | 21 |
| A 75 | 2 | | J3-V | 30 | N | | 3 | K8- 4 | 16 | N | 11 | 21 |
| A 76 | 2 | | J3-W | 30 | N | | 3 | K8- 6 | 16 | N | 11 | 21 |
| A 77 | 2 | | J3-X | 30 | N | | 3 | K8- 8 | 16 | N | 11 | 21 |
| A 78 | 2 | | J3-Y | 30 | N | | 3 | K8-10 | 16 | N | 11 | 21 |
| A 79 | 2 | | J3-Z | 30 | N | | 3 | K8-12 | 16 | N | 11 | 21 |
| A 80 | 2 | | J3-A* | 30 | N | | 3 | K8-14 | 16 | N | 11 | 16 |
| A 81 | 2 | | J3-B* | 30 | N | | 3 | K8-16 | 16 | N | 11 | 16 |
| A 82 | 2 | | J3-C* | 30 | N | | 3 | K8-18 | 16 | N | 11 | 16 |
| A 83 | 2 | | J3-D* | 30 | N | | 3 | K8-20 | 16 | N | 11 | 16 |
| A 84 | 2 | | J3-E* | 30 | N | | 3 | K8-22 | 16 | N | 11 | 16 |
| A 85 | 2 | | J3-F* | 30 | N | | 3 | K8-24 | 16 | N | 11 | 16 |
| A 86 | 2 | | J3-G* | 30 | N | | 3 | K10- 2 | 16 | N | 11 | 26 |
| A 87 | 2 | | J3-H* | 30 | N | | 3 | K10- 4 | 16 | N | 11 | 26 |
| A 88 | 2 | | J3-I* | 30 | N | | 3 | K10- 6 | 16 | N | 11 | 26 |
| A 89 | 2 | | J3-J* | 30 | N | | 3 | K10- 8 | 16 | N | 11 | 26 |
| A 90 | 2 | | J3-K* | 30 | N | | 3 | K10-10 | 16 | N | 11 | 26 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR |  |  | FROM |  |  |  |  | TO |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2> | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2> | TIN | TERMINATION SPEC. 1> ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2> | TIN | TERMINATION SPEC 1> ITEM NO. | NO. |
| A 91 | 2 |  | J3-M* | 30 | N |  | 3 | K10-12 | 16 | N | 11 | 26 |
| A 92 | 2 |  | J3-N* | 30 | N |  | 3 | K10-18 | 16 | N | 11 | 26 |
| A 93 | 2 |  | J3-P* | 30 | N |  | 3 | K10-20 | 16 | N | 11 | 26 |
| A 94 | 2 |  | J3-Q* | 30 | N |  | 3 | K10-22 | 16 | N | 11 | 26 |
| A 95 | 2 |  | J3-R* | 30 | N |  | 3 | K10-24 | 16 | N | 11 | 26 |
| A 96 | 2 |  | K4- 6 | 16 | N | 11 | 28 | K11-16 | 16 | N | 11 | 15 |
| A 97 | 2 |  | J3-T* | 30 | N |  | 3 | K11-24 | 16 | N | 11 | 15 |
| A 98 | 2 |  | J3-U* | 30 | N |  | 3 | K11-22 | 16 | N | 11 | 15 |
| A 99 | 2 |  | J3-V* | 30 | N |  | 3 | K12- 2 | 16 | N | 11 | 12 |
| A 100 | 2 |  | J3-W* | 30 | N |  | 3 | K12- 4 | 16 | N | 11 | 12 |
| A 101 | 2 |  | J3-X* | 30 | N |  | 3 | K12- 6 | 16 | N | 11 | 12 |
| A 102 | 2 |  | J3-Y* | 30 | N |  | 3 | K12-10 | 16 | N | 11 | 12 |
| A 103 | 2 |  | J3-Z* | 30 | N |  | 3 | K12-12 | 16 | N | 11 | 12 |
| A 104 | 2 |  | J3-AA | 30 | N |  | 3 | K12-14 | 16 | N | 11 | 12 |
| A 105 | 2 |  | J3-BB | 30 | N |  | 3 | K12-16 | 16 | N | 11 | 12 |
| A 106 | 2 |  | J3-CC | 30 | N |  | 3 | K12-18 | 16 | N | 11 | 12 |
| A 107 | 2 |  | J3-DD | 30 | N |  | 3 | K12-20 | 16 | N | 11 | 12 |
| A 108 | 2 |  | J3-EE | 30 | N |  | 3 | K12-22 | 16 | N | 11 | 12 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GED WIRING HARNESS A C 1900094

| CONDUCTOR |  |  | FROM |  |  |  |  | TO |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2> | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2> | TIN | TERMINATION SPEC. 1> ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2> | TIN | TERMINATION SPEC 1> ITEM NO. | NO. |
| A 109 | 2 |  | J3-FF | 30 | N |  | 3 | K12-24 | 16 | N | 11 | 12 |
| A 110 | 2 |  | J3-GG | 30 | N |  | 3 | K14- 2 | 16 | N | 11 | 23 |
| A 111 | 2 |  | J3-HH | 30 | N |  | 3 | K14- 4 | 16 | N | 11 | 23 |
| A 112 | 2 |  | J3-JJ | 30 | N |  | 3 | K14- 6 | 16 | N | 11 | 23 |
| A 113 | 2 |  | J3-KK | 30 | N |  | 3 | K14- 8 | 16 | N | 11 | 23 |
| A 114 | 2 |  | J3-LL | 30 | N |  | 3 | K14-10 | 16 | N | 11 | 23 |
| A 115 | 2 |  | J3-MM | 30 | N |  | 3 | K14-12 | 16 | N | 11 | 23 |
| A 116 | 2 |  | J3-NN | 30 | N |  | 3 | K14-14 | 16 | N | 11 | 14 |
| A 117 | 2 |  | J3-PP | 30 | N |  | 3 | K14-16 | 16 | N | 11 | 14 |
| A 118 | 2 |  | J4-A | 30 | N |  | 4 | K9-18 | 16 | N | 11 | 11 |
| A 119 | 2 |  | J4-B | 30 | N |  | 4 | K9-20 | 16 | N | 11 | 11 |
| A 120 | 2 |  | J4-C | 30 | N |  | 4 | K9-22 | 16 | N | 11 | 11 |
| A 121 | 2 |  | J4-D | 30 | N |  | 4 | K9-24 | 16 | N | 11 | 11 |
| A 122 | 2 |  | J4-S* | 30 | N |  | 4 | K15- 2 | 16 | N | 11 | 13 |
| A 123 | 2 |  | J4-T* | 30 | N |  | 4 | K15- 4 | 16 | N | 11 | 13 |
| A 124 | 2 |  | J4-U* | 30 | N |  | 4 | K15- 6 | 16 | N | 11 | 13 |
| A 125 | 2 |  | J4-V* | 30 | N |  | 4 | K15-10 | 16 | N | 11 | 13 |
| A 126 | 2 |  | J4-W* | 30 | N |  | 4 | K15-12 | 16 | N | 11 | 13 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GED WIRING HARNESS A C 1900094

| CONDUCTOR |  |  | FROM |  |  |  |  | TO |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2> | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2> | TIN | TERMINATION SPEC. 1> ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2> | TIN | TERMINATION SPEC 1> ITEM NO. | NO. |
| A 127 | 2 |  | J4-X* | 30 | N |  | 4 | K15-14 | 16 | N | 11 | 13 |
| A 128 | 2 |  | J4-Y* | 30 | N |  | 4 | K15-18 | 16 | N | 11 | 13 |
| A 129 | 2 |  | J4-AA | 30 | N |  | 4 | K15-22 | 16 | N | 11 | 13 |
| A 130 | 2 |  | J4-BB | 30 | N |  | 4 | K13- 2 | 16 | N | 11 | 25 |
| A 131 | 2 |  | J4-CC | 30 | N |  | 4 | K13- 4 | 16 | N | 11 | 25 |
| A 132 | 2 |  | J4-DD | 30 | N |  | 4 | K13- 6 | 16 | N | 11 | 25 |
| A 133 | 2 |  | J4-EE | 30 | N |  | 4 | K13-10 | 16 | N | 11 | 25 |
| A 134 | 2 |  | J4-FF | 30 | N |  | 4 | K13-12 | 16 | N | 11 | 25 |
| A 135 | 2 |  | J4-GG | 30 | N |  | 4 | K13-14 | 16 | N | 11 | 25 |
| A 136 | 2 |  | J4-HH | 30 | N |  | 4 | K13-18 | 16 | N | 11 | 25 |
| A 137 | 2 |  | J4-JJ | 30 | N |  | 4 | K13-20 | 16 | N | 11 | 25 |
| A 138 | 2 |  | J4-KK | 30 | N |  | 4 | K13-22 | 16 | N | 11 | 25 |
| A 139 | 2 |  | J4-LL | 30 | N |  | 4 | K16-14 | 16 | N | 11 | 24 |
| A 140 | 2 |  | J4-MM | 30 | N |  | 4 | K16-16 | 16 | N | 11 | 24 |
| A 141 | 2 |  | J4-Z* | 30 | N |  | 4 | K15-20 | 16 | N | 11 | 13 |
| A 142 | 2 |  | J4-NN | 30 | N |  | 4 | K16-18 | 16 | N | 11 | 24 |
| A 143 | 2 |  | J4-PP | 30 | N |  | 4 | K16-20 | 16 | N | 11 | 24 |
| A 144 | 2 |  | J5-A | 30 | N |  | 7 | K1- 1 | 16 | N | 11 | 29 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GED WIRING HARNESS. A C 1900094

| CONDUCTOR |  |  | FROM |  |  |  |  | TO |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2> | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2> | TIN | TERMINATION SPEC. 1> ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2> | TIN | TERMINATION SPEC 1> ITEM NO. | NO. |
| A 145 | 2 |  | J5-B | 30 | N |  | 7 | K1- 3 | 16 | N | 11 | 29 |
| A 146 | 2 |  | J5-C | 30 | N |  | 7 | K1- 5 | 16 | N | 11 | 29 |
| A 147 | 2 |  | J5-D | 30 | N |  | 7 | K1- 7 | 16 | N | 11 | 29 |
| A 148 | 2 |  | J5-E | 30 | N |  | 7 | K1- 9 | 16 | N | 11 | 29 |
| A 149 | 2 |  | J5-F | 30 | N |  | 7 | K1-11 | 16 | N | 11 | 29 |
| A 150 | 2 |  | J5-G | 30 | N |  | 7 | K1-13 | 16 | N | 11 | 29 |
| A 151 | 2 |  | J5-H | 30 | N |  | 7 | K1-15 | 16 | N | 11 | 29 |
| A 152 | 2 |  | J5-J | 30 | N |  | 7 | K1-17 | 16 | N | 11 | 29 |
| A 153 | 2 |  | J5-K | 30 | N |  | 7 | K10-11 | 16 | N | 11 | 26 |
| A 154 | 2 |  | J5-L | 30 | N |  | 7 | K1-19 | 16 | N | 11 | 29 |
| A 155 | 2 |  | J5-M | 30 | N |  | 7 | K1-21 | 16 | N | 11 | 29 |
| A 156 | 2 |  | J5-N | 30 | N |  | 7 | K1-23 | 16 | N | 11 | 29 |
| A 157 | 2 |  | J5-P | 30 | N |  | 7 | K2- 1 | 16 | N | 11 | 19 |
| A 158 | 2 |  | J5-R | 30 | N |  | 7 | K2- 3 | 16 | N | 11 | 19 |
| A 159 | 2 |  | J5-S | 30 | N |  | 7 | K2- 5 | 16 | N | 11 | 19 |
| A 160 | 2 |  | J5-T | 30 | N |  | 7 | K2- 7 | 16 | N | 11 | 19 |
| A 161 | 2 |  | J5-U | 30 | N |  | 7 | K2- 9 | 16 | N | 11 | 19 |
| A 162 | 2 |  | J5-V | 30 | N |  | 7 | K2-11 | 16 | N | 11 | 19 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | INDIVIDUAL LENGTH ITEM NO. | CIRCUIT POINT | CUT WIRE OR SHIELD STRIP WIRE OR JACKET 2 | TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | CIRCUIT POINT | CUT WIRE OR SHIELD STRIP WIRE OR JACKET 2 | TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 163 | 2 | J5-W | 30 | N | | 7 | K2-13 | 16 | N | 11 | 18 |
| A 164 | 2 | J5-X | 30 | N | | 7 | K10-13 | 16 | N | 11 | 26 |
| A 165 | 2 | J5-Y | 30 | N | | 7 | K2-15 | 16 | N | 11 | 18 |
| A 166 | 2 | J5-Z | 30 | N | | 7 | K2-17 | 16 | N | 11 | 18 |
| A 167 | 2 | J5-A* | 30 | N | | 7 | K2-19 | 16 | N | 11 | 18 |
| A 168 | 2 | J5-B* | 30 | N | | 7 | K2-21 | 16 | N | 11 | 18 |
| A 169 | 2 | J5-C* | 30 | N | | 7 | K2-23 | 16 | N | 11 | 18 |
| A 170 | 2 | J5-D* | 30 | N | | 7 | K4- 1 | 16 | N | 11 | 28 |
| A 171 | 2 | J5-E* | 30 | N | | 7 | K4- 3 | 16 | N | 11 | 28 |
| A 172 | 2 | J5-F* | 30 | N | | 7 | K4- 5 | 16 | N | 11 | 28 |
| A 173 | 2 | J5-G* | 30 | N | | 7 | K4- 7 | 16 | N | 11 | 28 |
| A 174 | 2 | J5-H* | 30 | N | | 7 | K4- 9 | 16 | N | 11 | 28 |
| A 175 | 2 | J5-I* | 30 | N | | 7 | K10-15 | 16 | N | 11 | 26 |
| A 176 | 2 | J5-J* | 30 | N | | 7 | K4-11 | 16 | N | 11 | 28 |
| A 177 | 2 | J5-K* | 30 | N | | 7 | K4-13 | 16 | N | 11 | 28 |
| A 178 | 2 | J5-M* | 30 | N | | 7 | K4-15 | 16 | N | 11 | 28 |
| A 179 | 2 | J5-N* | 30 | N | | 7 | K4-17 | 16 | N | 11 | 28 |
| A 180 | 2 | J5-P* | 30 | N | | 7 | K4-19 | 16 | N | 11 | 28 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | INDIVIDUAL LENGTH ITEM NO. | CIRCUIT POINT | CUT WIRE OR SHIELD STRIP WIRE OR JACKET 2 | TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | CIRCUIT POINT | CUT WIRE OR SHIELD STRIP WIRE OR JACKET 2 | TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 181 | 2 | J5-Q* | 30 | N | | 7 | K4-21 | 16 | N | 11 | 28 |
| A 182 | 2 | J5-R* | 30 | N | | 7 | K4-23 | 16 | N | 11 | 28 |
| A 183 | 2 | J5-S* | 30 | N | | 7 | K5- 1 | 16 | N | 11 | 20 |
| A 184 | 2 | J5-T* | 30 | N | | 7 | K5- 3 | 16 | N | 11 | 20 |
| A 185 | 2 | J5-U* | 30 | N | | 7 | K5- 5 | 16 | N | 11 | 20 |
| A 186 | 2 | J5-V* | 30 | N | | 7 | K11-13 | 16 | N | 11 | 15 |
| A 187 | 2 | J5-W* | 30 | N | | 7 | K5- 7 | 16 | N | 11 | 20 |
| A 188 | 2 | J5-X* | 30 | N | | 7 | K5- 9 | 16 | N | 11 | 20 |
| A 189 | 2 | J5-Y* | 30 | N | | 7 | K5-11 | 16 | N | 11 | 20 |
| A 190 | 2 | J5-Z* | 30 | N | | 7 | K5-13 | 16 | N | 11 | 17 |
| A 191 | 2 | J5-AA | 30 | N | | 7 | K5-15 | 16 | N | 11 | 17 |
| A 192 | 2 | J5-BB | 30 | N | | 7 | K5-17 | 16 | N | 11 | 17 |
| A 193 | 2 | J5-CC | 30 | N | | 7 | K5-19 | 16 | N | 11 | 17 |
| A 194 | 2 | J5-DD | 30 | N | | 7 | K5-21 | 16 | N | 11 | 17 |
| A 195 | 2 | J5-EE | 30 | N | | 7 | K5-23 | 16 | N | 11 | 17 |
| A 196 | 2 | J5-FF | 30 | N | | 7 | K3- 1 | 16 | N | 11 | 9 |
| A 197 | 2 | J5-GG | 30 | N | | 7 | K16- 9 | 16 | N | 11 | 24 |
| A 198 | 2 | J5-HH | 30 | N | | 7 | K3- 3 | 16 | N | 11 | 9 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

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| CONDUCTOR | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | INDIVIDUAL LENGTH ITEM NO. | CIRCUIT POINT | CUT WIRE OR SHIELD STRIP WIRE OL JACKET 2 | TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | CIRCUIT POINT | CUT WIRE OR SHIELD STRIP WIRE OR JACKET 2 | TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 199 | 2 | J6-F | 30 | N | | 6 | K3-11 | 16 | N | 11 | 9 |
| A 200 | 2 | J6-E | 30 | N | | 6 | K3-13 | 16 | N | 11 | 9 |
| A 201 | 2 | J6-D | 30 | N | | 6 | K3-15 | 16 | N | 11 | 9 |
| A 202 | 2 | J6-C | 30 | N | | 6 | K11-15 | 16 | N | 11 | 15 |
| A 203 | 2 | J6-G | 30 | N | | 6 | K3-17 | 16 | N | 11 | 9 |
| A 204 | 2 | J6-H | 30 | N | | 6 | K3-19 | 16 | N | 11 | 9 |
| A 205 | 2 | J6-J | 30 | N | | 6 | K3-21 | 16 | N | 11 | 9 |
| A 206 | 2 | J6-K | 30 | N | | 6 | K3-23 | 16 | N | 11 | 9 |
| A 207 | 2 | J6-L | 30 | N | | 6 | K16-11 | 16 | N | 11 | 24 |
| A 208 | 2 | J6-M | 30 | N | | 6 | K6- 1 | 16 | N | 11 | 10 |
| A 209 | 2 | J6-N | 30 | N | | 6 | K6- 3 | 16 | N | 11 | 10 |
| A 210 | 2 | J6-P | 30 | N | | 6 | K6- 5 | 16 | N | 11 | 10 |
| A 211 | 2 | J6-R | 30 | N | | 6 | K6- 7 | 16 | N | 11 | 10 |
| A 212 | 2 | J6-S | 30 | N | | 6 | K11-17 | 16 | N | 11 | 15 |
| A 213 | 2 | J6-T | 30 | N | | 6 | K6- 9 | 16 | N | 11 | 10 |
| A 214 | 2 | J6-U | 30 | N | | 6 | K6-11 | 16 | N | 11 | 10 |
| A 215 | 2 | J6-V | 30 | N | | 6 | K6-13 | 16 | N | 11 | 10 |
| A 216 | 2 | J6-W | 30 | N | | 6 | K6-15 | 16 | N | 11 | 10 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

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WIRING HARNESS A C 1900094

| CONDUCTOR | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | INDIVIDUAL LENGTH ITEM NO. | CIRCUIT POINT | CUT WIRE OR SHIELD STRIP WIRE OR JACKET 2 | TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | CIRCUIT POINT | CUT WIRE OR SHIELD STRIP WIRE OR JACKET 2 | TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 217 | 2 | J6-Y | 30 | N | | 6 | K6-17 | 16 | N | 11 | 10 |
| A 218 | 2 | J6-Z | 30 | N | | 6 | K6-19 | 16 | N | 11 | 10 |
| A 219 | 2 | J6-A* | 30 | N | | 6 | K6-21 | 16 | N | 11 | 10 |
| A 220 | 2 | J6-B* | 30 | N | | 6 | K6-23 | 16 | N | 11 | 10 |
| A 221 | 2 | J6-D* | 30 | N | | 6 | K9- 1 | 16 | N | 11 | 11 |
| A 222 | 2 | J6-E* | 30 | N | | 6 | K9- 3 | 16 | N | 11 | 11 |
| A 223 | 2 | J6-F* | 30 | N | | 6 | K9- 5 | 16 | N | 11 | 11 |
| A 224 | 2 | J6-G* | 30 | N | | 6 | K9- 7 | 16 | N | 11 | 11 |
| A 225 | 2 | J6-I* | 30 | N | | 6 | K9- 9 | 16 | N | 11 | 11 |
| A 226 | 2 | J6-J* | 30 | N | | 6 | K9-11 | 16 | N | 11 | 11 |
| A 227 | 2 | J6-K* | 30 | N | | 6 | K9-13 | 16 | N | 11 | 11 |
| A 228 | 2 | J6-M* | 30 | N | | 6 | K9-15 | 16 | N | 11 | 11 |
| A 229 | 2 | J6-P* | 30 | N | | 6 | K9-17 | 16 | N | 11 | 11 |
| A 230 | 2 | J6-Q* | 30 | N | | 6 | K9-19 | 16 | N | 11 | 11 |
| A 231 | 2 | J6-R* | 30 | N | | 6 | K9-21 | 16 | N | 11 | 11 |
| A 232 | 2 | J6-S* | 30 | N | | 6 | K9-23 | 16 | N | 11 | 11 |
| A 233 | 2 | J6-T* | 30 | N | | 6 | K11-19 | 16 | N | 11 | 15 |
| A 234 | 1 | P1-A | 30 | N | | 5 | E1 | 30 | Y | | 8 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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## WIRING HARNESS A

C 1900094

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | FROM CIRCUIT POINT | TIN | FROM TERMINATION SPEC. ITEM NO. | FROM NO. | TO CIRCUIT POINT | TIN | TO TERMINATION SPEC ITEM NO. | TO NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 235 | 2 | K1- 1 | 16N | 11 | 29 | K7- 1 | 16N | 11 | 27 |
| A 236 | 2 | K1- 3 | 16N | 11 | 29 | K7- 3 | 16N | 11 | 27 |
| A 237 | 2 | K1- 5 | 16N | 11 | 29 | K7- 5 | 16N | 11 | 27 |
| A 238 | 2 | K1- 7 | 16N | 11 | 29 | K7- 7 | 16N | 11 | 27 |
| A 239 | 2 | K1- 9 | 16N | 11 | 29 | K7- 9 | 16N | 11 | 27 |
| A 240 | 2 | K1-11 | 16N | 11 | 29 | K7-11 | 16N | 11 | 27 |
| A 241 | 2 | K1-13 | 16N | 11 | 29 | K7-13 | 16N | 11 | 27 |
| A 242 | 2 | K1-15 | 16N | 11 | 29 | K7-15 | 16N | 11 | 27 |
| A 243 | 2 | K1-17 | 16N | 11 | 29 | K7-17 | 16N | 11 | 27 |
| A 244 | 2 | K1-19 | 16N | 11 | 29 | K7-19 | 16N | 11 | 27 |
| A 245 | 2 | K1-21 | 16N | 11 | 29 | K7-21 | 16N | 11 | 27 |
| A 246 | 2 | K1-23 | 16N | 11 | 29 | K7-23 | 16N | 11 | 27 |
| A 247 | 2 | K2- 1 | 16N | 11 | 19 | K8- 1 | 16N | 11 | 21 |
| A 248 | 2 | K2- 3 | 16N | 11 | 19 | K8- 3 | 16N | 11 | 21 |
| A 249 | 2 | K2- 5 | 16N | 11 | 19 | K8- 5 | 16N | 11 | 21 |
| A 250 | 2 | K2- 7 | 16N | 11 | 19 | K8- 7 | 16N | 11 | 21 |
| A 251 | 2 | K2- 9 | 16N | 11 | 19 | K8- 9 | 16N | 11 | 21 |
| A 252 | 2 | K2-11 | 16N | 11 | 19 | K8-11 | 16N | 11 | 21 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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## WIRING HARNESS A

C 1900094

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | FROM CIRCUIT POINT | TIN | FROM TERMINATION SPEC. ITEM NO. | FROM NO. | TO CIRCUIT POINT | TIN | TO TERMINATION SPEC ITEM NO. | TO NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 253 | 2 | K2-13 | 16N | 11 | 18 | K8-13 | 16N | 11 | 16 |
| A 254 | 2 | K2-17 | 16N | 11 | 18 | K8-17 | 16N | 11 | 16 |
| A 255 | 2 | K2-19 | 16N | 11 | 18 | K8-19 | 16N | 11 | 16 |
| A 256 | 2 | K2-21 | 16N | 11 | 18 | K8-21 | 16N | 11 | 16 |
| A 257 | 2 | K2-23 | 16N | 11 | 18 | K8-23 | 16N | 11 | 16 |
| A 258 | 2 | K3- 1 | 16N | 11 | 9 | K11- 9 | 16N | 11 | 22 |
| A 259 | 2 | K4-11 | 16N | 11 | 28 | K11-11 | 16N | 11 | 22 |
| A 260 | 2 | K3-11 | 16N | 11 | 9 | K16-19 | 16N | 11 | 24 |
| A 261 | 2 | K3- 9 | 16N | 11 | 9 | K11-21 | 16N | 11 | 15 |
| A 262 | 2 | K3-15 | 16N | 11 | 9 | K8-15 | 16N | 11 | 16 |
| A 263 | 2 | K3-17 | 16N | 11 | 9 | K12- 1 | 16N | 11 | 12 |
| A 264 | 2 | K3-19 | 16N | 11 | 9 | K12- 3 | 16N | 11 | 12 |
| A 265 | 2 | K3-21 | 16N | 11 | 9 | K12- 5 | 16N | 11 | 12 |
| A 266 | 2 | K3-23 | 16N | 11 | 9 | K12- 7 | 16N | 11 | 12 |
| A 267 | 2 | K4- 1 | 16N | 11 | 28 | K10- 1 | 16N | 11 | 26 |
| A 268 | 2 | K4- 3 | 16N | 11 | 28 | K10- 3 | 16N | 11 | 26 |
| A 269 | 2 | K4- 5 | 16N | 11 | 28 | K10- 5 | 16N | 11 | 26 |
| A 270 | 2 | K4- 7 | 16N | 11 | 28 | K10- 7 | 16N | 11 | 26 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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## WIRING HARNESS A

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| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | FROM CIRCUIT POINT | TIN | FROM TERMINATION SPEC. ITEM NO. | FROM NO. | TO CIRCUIT POINT | TIN | TO TERMINATION SPEC ITEM NO. | TO NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 271 | 2 | K4- 9 | 16N | 11 | 28 | K10- 9 | 16N | 11 | 26 |
| A 272 | 2 | K5- 9 | 16N | 11 | 20 | K10-17 | 16N | 11 | 26 |
| A 273 | 2 | K5-11 | 16N | 11 | 20 | K10-19 | 16N | 11 | 26 |
| A 274 | 2 | K5-13 | 16N | 11 | 17 | K10-21 | 16N | 11 | 26 |
| A 275 | 2 | K5-15 | 16N | 11 | 17 | K10-23 | 16N | 11 | 26 |
| A 276 | 2 | K5-17 | 16N | 11 | 17 | K11- 1 | 16N | 11 | 22 |
| A 277 | 2 | K5-19 | 16N | 11 | 17 | K11- 3 | 16N | 11 | 22 |
| A 278 | 2 | K5-21 | 16N | 11 | 17 | K11- 5 | 16N | 11 | 22 |
| A 279 | 2 | K5-23 | 16N | 11 | 17 | K11- 9 | 16N | 11 | 22 |
| A 280 | 2 | K6- 1 | 16N | 11 | 10 | K15- 1 | 16N | 11 | 13 |
| A 281 | 2 | K6- 3 | 16N | 11 | 10 | K15- 3 | 16N | 11 | 13 |
| A 282 | 2 | K6- 5 | 16N | 11 | 10 | K15- 5 | 16N | 11 | 13 |
| A 283 | 2 | K6- 7 | 16N | 11 | 10 | K15- 7 | 16N | 11 | 13 |
| A 284 | 2 | K6- 9 | 16N | 11 | 10 | K12- 9 | 16N | 11 | 12 |
| A 285 | 2 | K6-11 | 16N | 11 | 10 | K12-11 | 16N | 11 | 12 |
| A 286 | 2 | K6-13 | 16N | 11 | 10 | K12-13 | 16N | 11 | 12 |
| A 287 | 2 | K6-15 | 16N | 11 | 10 | K12-15 | 16N | 11 | 12 |
| A 288 | 2 | K6-17 | 16N | 11 | 10 | K12-17 | 16N | 11 | 12 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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## WIRING HARNESS. A

C 1900094

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | FROM CIRCUIT POINT | TIN | FROM TERMINATION SPEC. ITEM NO. | FROM NO. | TO CIRCUIT POINT | TIN | TO TERMINATION SPEC ITEM NO. | TO NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 289 | 2 | K6-19 | 16N | 11 | 10 | K12-19 | 16N | 11 | 12 |
| A 290 | 2 | K6-21 | 16N | 11 | 10 | K12-21 | 16N | 11 | 12 |
| A 291 | 2 | K1-A | 16N | 11 | 29 | K4-A | 16N | 11 | 28 |
| A 292 | 2 | K2-A | 16N | 11 | 18 | K1-A | 16N | 11 | 29 |
| A 293 | 2 | K2-B | 16N | 11 | 18 | K1-B | 16N | 11 | 29 |
| A 294 | 2 | K1-B | 16N | 11 | 29 | K4-B | 16N | 11 | 28 |
| A 295 | 2 | K2-A | 16N | 11 | 18 | K3-A | 16N | 11 | 9 |
| A 296 | 2 | K2-B | 16N | 11 | 18 | K3-B | 16N | 11 | 9 |
| A 297 | 2 | K4-A | 16N | 11 | 28 | K5-A | 16N | 11 | 17 |
| A 298 | 2 | K4-B | 16N | 11 | 28 | K5-B | 16N | 11 | 17 |
| A 299 | 2 | K6-A | 16N | 11 | 10 | K5-A | 16N | 11 | 17 |
| A 300 | 2 | K6-B | 16N | 11 | 10 | K5-B | 16N | 11 | 17 |
| A 301 | 2 | K6-A | 16N | 11 | 10 | K9-A | 16N | 11 | 11 |
| A 302 | 2 | K6-B | 16N | 11 | 10 | K9-B | 16N | 11 | 11 |
| A 303 | 2 | K6-23 | 16N | 11 | 10 | K12-23 | 16N | 11 | 12 |
| A 304 | 2 | K8-B | 16N | 11 | 16 | K9-B | 16N | 11 | 11 |
| A 305 | 2 | K7-A | 16N | 11 | 27 | K10-A | 16N | 11 | 26 |
| A 306 | 2 | K8-A | 16N | 11 | 16 | K7-A | 16N | 11 | 27 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
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GED WIRING HARNESS A C 1900094

| CONDUCTOR INDIVIDUAL LENGTH | | | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | FROM TERMINATION SPEC. 1> | | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | TO TERMINATION SPEC 1> | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2> | CIRCUIT POINT | 2> | T I N 2> | ITEM NO. | NO. | CIRCUIT POINT | 2> | T I N 2> | ITEM NO. | NO. |
| A 307 | 2 | | K8-B | 16 | N | 11 | 16 | K7-B | 16 | N | 11 | 27 |
| A 308 | 2 | | K7-B | 16 | N | 11 | 27 | K10-B | 16 | N | 11 | 26 |
| A 309 | 2 | | K15-23 | 16 | N | 11 | 13 | K12-23 | 16 | N | 11 | 12 |
| A 310 | 2 | | K8-15 | 16 | N | 11 | 16 | K16-17 | 16 | N | 11 | 24 |
| A 311 | 2 | | K9- 1 | 16 | N | 11 | 11 | K14- 1 | 16 | N | 11 | 23 |
| A 312 | 2 | | K9- 3 | 16 | N | 11 | 11 | K14- 3 | 16 | N | 11 | 23 |
| A 313 | 2 | | K9- 5 | 16 | N | 11 | 11 | K14- 5 | 16 | N | 11 | 23 |
| A 314 | 2 | | K9- 7 | 16 | N | 11 | 11 | K14- 7 | 16 | N | 11 | 23 |
| A 315 | 2 | | K9- 9 | 16 | N | 11 | 11 | K14- 9 | 16 | N | 11 | 23 |
| A 316 | 2 | | K9-11 | 16 | N | 11 | 11 | K14-11 | 16 | N | 11 | 23 |
| A 317 | 2 | | K9-13 | 16 | N | 11 | 11 | K14-13 | 16 | N | 11 | 14 |
| A 318 | 2 | | K9-15 | 16 | N | 11 | 11 | K14-15 | 16 | N | 11 | 14 |
| A 319 | 2 | | K9-17 | 16 | N | 11 | 11 | K13-17 | 16 | N | 11 | 25 |
| A 320 | 2 | | K9-19 | 16 | N | 11 | 11 | K13-19 | 16 | N | 11 | 25 |
| A 321 | 2 | | K9-21 | 16 | N | 11 | 11 | K13-21 | 16 | N | 11 | 25 |
| A 322 | 2 | | K9-23 | 16 | N | 11 | 11 | K13-23 | 16 | N | 11 | 25 |
| A 323 | 2 | | K10-11 | 16 | N | 11 | 26 | K16- 1 | 16 | N | 11 | 24 |
| A 324 | 2 | | K10-13 | 16 | N | 11 | 26 | K16- 3 | 16 | N | 11 | 24 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GED WIRING HARNESS A E 1900094

| CONDUCTOR INDIVIDUAL LENGTH | | | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | FROM TERMINATION SPEC. 1> | | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | TO TERMINATION SPEC 1> | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2> | CIRCUIT POINT | 2> | T I N 2> | ITEM NO. | NO. | CIRCUIT POINT | 2> | T I N 2> | ITEM NO. | NO. |
| A 325 | 2 | | K10-15 | 16 | N | 11 | 26 | K16- 5 | 16 | N | 11 | 24 |
| A 326 | 2 | | K11-A | 16 | N | 11 | 15 | K10-A | 16 | N | 11 | 26 |
| A 327 | 2 | | K11-B | 16 | N | 11 | 15 | K10-B | 16 | N | 11 | 26 |
| A 328 | 2 | | K11-11 | 16 | N | 11 | 22 | K16-15 | 16 | N | 11 | 24 |
| A 329 | 2 | | K11-13 | 16 | N | 11 | 15 | K16- 7 | 16 | N | 11 | 24 |
| A 330 | 2 | | K11-23 | 16 | N | 11 | 15 | K16-13 | 16 | N | 11 | 24 |
| A 331 | 2 | | K11-10 | 16 | N | 11 | 22 | K12- 8 | 16 | N | 11 | 12 |
| A 332 | 2 | | K11-A | 16 | N | 11 | 15 | K12-A | 16 | N | 11 | 12 |
| A 333 | 2 | | K11-B | 16 | N | 11 | 15 | K12-B | 16 | N | 11 | 12 |
| A 334 | 2 | | K12- 9 | 16 | N | 11 | 12 | K15- 9 | 16 | N | 11 | 13 |
| A 335 | 2 | | K12-11 | 16 | N | 11 | 12 | K15-11 | 16 | N | 11 | 13 |
| A 336 | 2 | | K12-13 | 16 | N | 11 | 12 | K15-13 | 16 | N | 11 | 13 |
| A 337 | 2 | | K12-15 | 16 | N | 11 | 12 | K15-15 | 16 | N | 11 | 13 |
| A 338 | 2 | | K12-17 | 16 | N | 11 | 12 | K15-17 | 16 | N | 11 | 13 |
| A 339 | 2 | | K12-19 | 16 | N | 11 | 12 | K15-19 | 16 | N | 11 | 13 |
| A 340 | 2 | | K12-21 | 16 | N | 11 | 12 | K15-21 | 16 | N | 11 | 13 |
| A 341 | 2 | | K14-A | 16 | N | 11 | 14 | K12-A | 16 | N | 11 | 12 |
| A 342 | 2 | | K15-B | 16 | N | 11 | 13 | K12-B | 16 | N | 11 | 12 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GED WIRING HARNESS A C 1900094

| CONDUCTOR INDIVIDUAL LENGTH | | | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | FROM TERMINATION SPEC. 1> | | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | TO TERMINATION SPEC 1> | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2> | CIRCUIT POINT | 2> | T I N 2> | ITEM NO. | NO. | CIRCUIT POINT | 2> | T I N 2> | ITEM NO. | NO. |
| A 343 | 2 | | K14- 1 | 16 | N | 11 | 23 | K13- 1 | 16 | N | 11 | 25 |
| A 344 | 2 | | K14- 3 | 16 | N | 11 | 23 | K13- 3 | 16 | N | 11 | 25 |
| A 345 | 2 | | K14- 5 | 16 | N | 11 | 23 | K13- 5 | 16 | N | 11 | 25 |
| A 346 | 2 | | K14- 7 | 16 | N | 11 | 23 | K13- 7 | 16 | N | 11 | 25 |
| A 347 | 2 | | K14- 9 | 16 | N | 11 | 23 | K13- 9 | 16 | N | 11 | 25 |
| A 348 | 2 | | K14-11 | 16 | N | 11 | 23 | K13-11 | 16 | N | 11 | 25 |
| A 349 | 2 | | K14-13 | 16 | N | 11 | 14 | K13-13 | 16 | N | 11 | 25 |
| A 350 | 2 | | K14-15 | 16 | N | 11 | 14 | K13-15 | 16 | N | 11 | 25 |
| A 351 | 2 | | K14-B | 16 | N | 11 | 14 | K15-B | 16 | N | 11 | 13 |
| A 352 | 2 | | K14-B | 16 | N | 11 | 14 | K13-B | 16 | N | 11 | 25 |
| A 353 | 2 | | K13- 8 | 16 | N | 11 | 25 | K15- 8 | 16 | N | 11 | 13 |
| A 354 | 2 | | K13-A | 16 | N | 11 | 25 | K15-A | 16 | N | 11 | 13 |
| A 355 | 2 | | K13-24 | 16 | N | 11 | 25 | K16-16 | 16 | N | 11 | 24 |
| A 356 | 2 | | K13-A | 16 | N | 11 | 25 | K16-A | 16 | N | 11 | 24 |
| A 357 | 2 | | K13-B | 16 | N | 11 | 25 | K16-B | 16 | N | 11 | 24 |
| A 358 | 2 | | K2-15 | 16 | N | 11 | 18 | K14-23 | 16 | N | 11 | 14 |
| A 359 | 2 | | K2-16 | 16 | N | 11 | 18 | K14-24 | 16 | N | 11 | 14 |
| A 360 | 2 | | K3-10 | 16 | N | 11 | 9 | K11-24 | 16 | N | 11 | 15 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR INDIVIDUAL LENGTH | | | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | FROM TERMINATION SPEC. 1> | | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | TO TERMINATION SPEC 1> | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2> | CIRCUIT POINT | 2> | T I N 2> | ITEM NO. | NO. | CIRCUIT POINT | 2> | T I N 2> | ITEM NO. | NO. |
| A 361 | 2 | | J6-A | 30 | N | | 6 | K3- 7 | 16 | N | 11 | 9 |
| A 362 | 2 | | J2-Q* | 30 | N | | 2 | K3- 8 | 16 | N | 11 | 9 |
| A 363 | 2 | | J3-S* | 30 | N | | 3 | K14-18 | 16 | N | 11 | 14 |
| A 364 | 2 | | K14-17 | 16 | N | 11 | 14 | K16-19 | 16 | N | 11 | 24 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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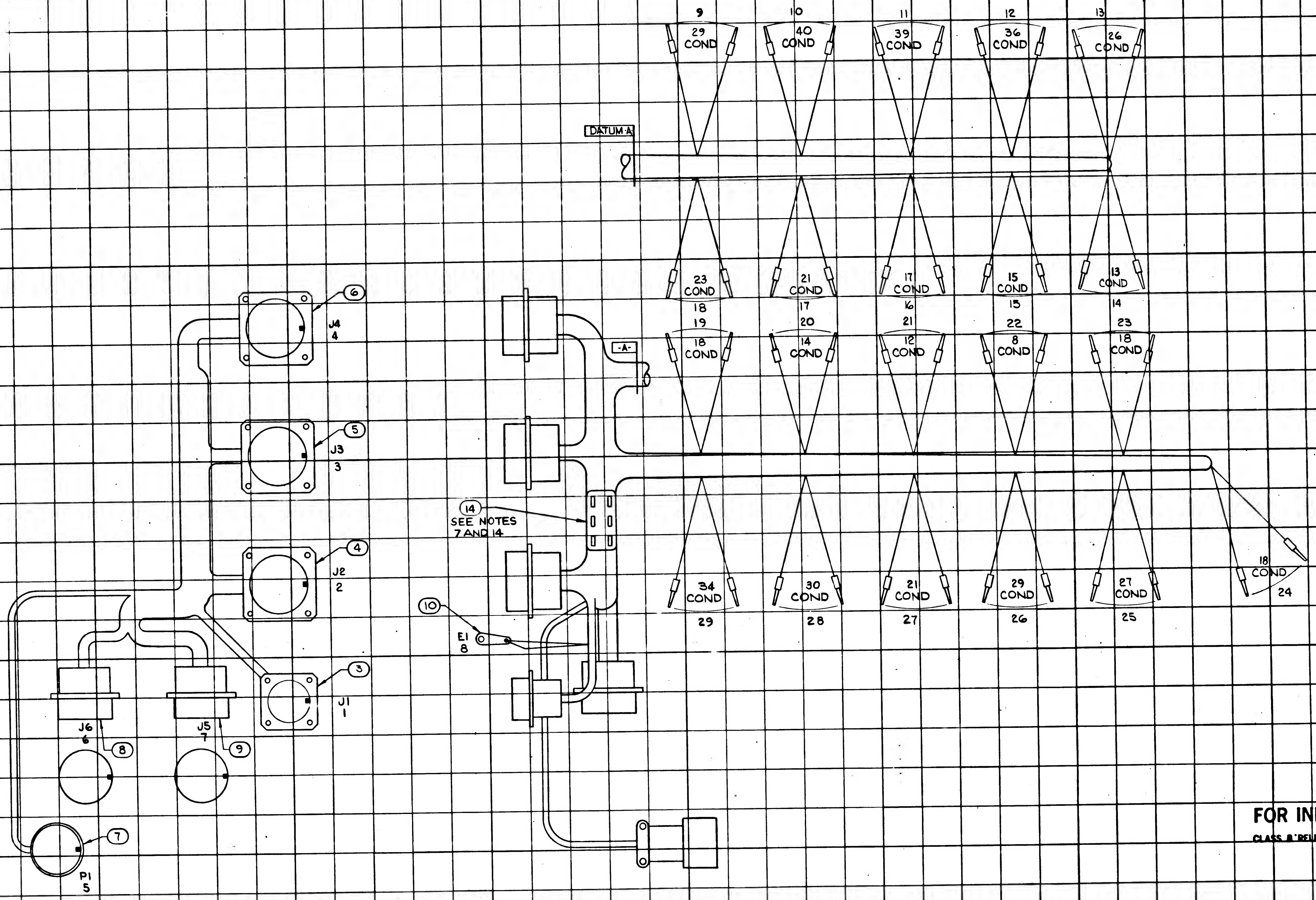
**REVISIONS**

| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD. |
|---|---|---|---|---|---|
|  |  | CHANGE IN ACCORDANCE WITH CM 196233 | — | 21 MAY 64 | Em |



**FOR INFORMATION ONLY**

CLASS "B" RELEASE TDR No. 23897 DATE 10/17/63

| | |
|---|---|
| NEXT ASSY | USED ON |
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN S. Agne DATE 2 AUG 63
M. Manning 19SEP63
CHECKED
APPROVAL H Williams 19SEP63
APPROVAL [illegible]
NASA APPROVAL [illegible]
MIT APPROVAL W Kofler 15 Oct 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS "A"

CODE IDENT NO. SIZE E 1900094

SCALE FULL SHEET

1900094

GED WIRING HARNESS A + 1900094

PENNANT GENERAL NOTES

| NOTE | |
|---|---|
| 1 | INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327. |
| 2 | WIRE PER ND |
| 3 | MARK CONDUCTOR IDENTIFICATION PER ND |
| 4 | SPACING OF CONDUCTOR IDENTIFICATION SHALL BE EVERY 2 INCHES. |
| 5 | SPIRALLING OF THE MARKING IS ALLOWED. |
| 6 | BIND WIRES TOGETHER USING ND FORM S OR Y LOCKSTITCH AT 1/2 INCH SPACING. |
| 7 | IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (ES-267). |
| 8 | SOLDER PER ND USING ND 1002075, AR FLUX AND SN60 SOLDER (ES-2505-1). |
| 9 | Y OR N IN TINNED COLUMN INDICATES YES OR NO. |
| 10 | A LETTER WITH AN ASTERISK SUFFIX, INDICATES A LOWER CASE LETTER. |
| 11 | GRID MODULE IS 1 INCH. |
| 12 | VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING. |

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900094
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GED WIRING HARNESS A + 1900094

PENNANT GENERAL NOTES

NOTE

13 TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

| APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD. | TOLERANCE WIRE OR CABLE | STRIP WIRE | STRIP JACKET | CUT WIRE | CUT SHIELD |
|---|---|---|---|---|---|
| UNDER 1 INCH | +.06-.00 | +.03-.00 | +.06-.06 | +.06-.06 | +.06-.06 |
| 1 INCH TO 6 INCHES | +.50-.00 | +.06-.00 | +.25-.25 | +.25-.25 | +.25-.25 |
| 6 INCHES TO 6 FEET | +1.00-.00 | | +.50-.50 | +.50-.50 | +.50-.50 |
| OVER 6 FEET | +2.00-.00 | | | | |

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REVISIONS

| SYM | DESCRIPTION | DATE | APPROVAL |
|---|---|---|---|
| | | | |

APPLICATION

| NEXT ASSY | USED ON |
|---|---|
| 1900052 | |

# FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 03892 DATE 10/15/63

| REV | + | + | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SHEET | 24 | 25 | | | | | | | | | | | | | | | | | | | | | | |
| REV STATUS REV | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| OF SHEETS SHEET | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | |

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

ACSP PN

DRAWN L. Ogne DATE 21 AUG 63
CHECKED M. MANNING 19 SEP 63
APPROVAL D. Williams 19 SEP 63
APPROVAL 9/11/63
NASA APPROVAL 10/1/63
MIT APPROVAL W. Cupper 15 Oct 63
CONTRACT

WIRING HARNESS A

CODE IDENT NO. | SIZE | 1900094 | REV
SCALE | SHEET 1 OF 25

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GED WIRING HARNESS A + 1900094

PENNANT LIST OF MATERIALS

| NOTE | ITEM | QTY | PART NO | DESCRIPTION |
|---|---|---|---|---|
| | 1 | 1 | 1900094-001 | WIRE PER ND1002181 TYPE 1, CLASS 1, 20AWG, WHT |
| | 2 | 1 | 1900094-002 | WIRE PER ND1002181 TYPE 1, CLASS 1, 24AWG, WHT |
| | 3 | 1 | MS-3127E-16-8PW (1897049-081) | CONNECTOR, RECEPTACLE |
| | 4 | 1 | MS-3127E-24-61P (1897055-610) | CONNECTOR, RECEPTACLE |
| | 5 | 1 | MS-3127E-24-61PW (1897055-611) | CONNECTOR, RECEPTACLE |
| | 6 | 1 | MS-3127E-24-61PX (1897055-612) | CONNECTOR, RECEPTACLE |
| | 7 | 1 | MS-3126F-16-8S (1897042-080) | CONNECTOR, PLUG |
| | 8 | 1 | MS-3127E-20-41S (1897052-410) | CONNECTOR, RECEPTACLE |
| | 9 | 1 | MS-3127E-22-55S (1897054-550) | CONNECTOR, RECEPTACLE |
| | 10 | 1 | MS35431-4 | TERMINAL LUG |
| 12 | 11 | 354 | 1015949-002 | TERMINAL PIN |
| | 12 | AR | QQ-S-571 | SOLDER SN60 (ES-2175 ALLOY 1) |
| | 13 | AR | QQ-S-571 | FLUX MIL-F-14256 (ES-2798) OR FLUX TYPE AR (ES-2175 TYPE 1 OR 2) |

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MIL 2084 4-63

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GED WIRING HARNESS A + 1900094

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | INDIVIDUAL LENGTH 2 | FROM CIRCUIT POINT | CUT WIRE OR SHIELD STRIP WIRE OR JACKET 2 | T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CIRCUIT POINT | CUT WIRE OR SHIELD STRIP WIRE OR JACKET 2 | T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 19 | 2 | | J2-K | 30 | N | | 2 | K2-10 | 30 | N | 11 | 19 |
| A 20 | 2 | | J2-L | 30 | N | | 2 | K2-12 | 30 | N | 11 | 19 |
| A 21 | 2 | | J2-M | 30 | N | | 2 | K2-14 | 30 | N | 11 | 18 |
| A 22 | 2 | | J2-N | 30 | N | | 2 | K2-16 | 30 | N | 11 | 18 |
| A 23 | 2 | | J2-P | 30 | N | | 2 | K2-18 | 30 | N | 11 | 18 |
| A 24 | 2 | | J2-R | 30 | N | | 2 | K2-20 | 30 | N | 11 | 18 |
| A 25 | 2 | | J2-U | 30 | N | | 2 | K4-12 | 30 | N | 11 | 28 |
| A 26 | 2 | | J2-V | 30 | N | | 2 | K4-14 | 30 | N | 11 | 28 |
| A 27 | 2 | | J2-W | 30 | N | | 2 | K4-16 | 30 | N | 11 | 28 |
| A 28 | 2 | | J2-X | 30 | N | | 2 | K4-18 | 30 | N | 11 | 28 |
| A 29 | 2 | | J2-Y | 30 | N | | 2 | K4-20 | 30 | N | 11 | 28 |
| A 30 | 2 | | J2-Z | 30 | N | | 2 | K4-22 | 30 | N | 11 | 28 |
| A 31 | 2 | | J2-A* | 30 | N | | 2 | K4-24 | 30 | N | 11 | 28 |
| A 32 | 2 | | J2-B* | 30 | N | | 2 | K5- 2 | 30 | N | 11 | 20 |
| A 33 | 2 | | J2-C* | 30 | N | | 2 | K5- 4 | 30 | N | 11 | 20 |
| A 34 | 2 | | J2-D* | 30 | N | | 2 | K5- 6 | 30 | N | 11 | 20 |
| A 35 | 2 | | J2-E* | 30 | N | | 2 | K5- 8 | 30 | N | 11 | 20 |
| A 36 | 2 | | J2-F* | 30 | N | | 2 | K5-10 | 30 | N | 11 | 20 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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MIL 2065 - 4-63 WIR

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GED WIRING HARNESS A + 1900094

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | INDIVIDUAL LENGTH 2 | FROM CIRCUIT POINT | CUT WIRE OR SHIELD STRIP WIRE OR JACKET 2 | T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CIRCUIT POINT | CUT WIRE OR SHIELD STRIP WIRE OR JACKET 2 | T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 37 | 2 | | J2-G* | 30 | N | | 2 | K5-12 | 30 | N | 11 | 20 |
| A 38 | 2 | | J2-H* | 30 | N | | 2 | K5-14 | 30 | N | 11 | 17 |
| A 39 | 2 | | J2-I* | 30 | N | | 2 | K5-16 | 30 | N | 11 | 17 |
| A 40 | 2 | | J2-J* | 30 | N | | 2 | K5-18 | 30 | N | 11 | 17 |
| A 41 | 2 | | J2-K* | 30 | N | | 2 | K5-20 | 30 | N | 11 | 17 |
| A 42 | 2 | | J2-M* | 30 | N | | 2 | K5-22 | 30 | N | 11 | 17 |
| A 43 | 2 | | J2-N* | 30 | N | | 2 | K3- 4 | 30 | N | 11 | 9 |
| A 44 | 2 | | J2-P* | 30 | N | | 2 | K3-12 | 30 | N | 11 | 9 |
| A 45 | 2 | | J2-Q* | 30 | N | | 2 | K3-14 | 30 | N | 11 | 9 |
| A 46 | 2 | | J2-R* | 30 | N | | 2 | K3-14 | 30 | N | 11 | 9 |
| A 47 | 2 | | J2-S* | 30 | N | | 2 | K3-16 | 30 | N | 11 | 9 |
| A 48 | 2 | | J2-T* | 30 | N | | 2 | K3-18 | 30 | N | 11 | 9 |
| A 49 | 2 | | J2-U* | 30 | N | | 2 | K6- 2 | 30 | N | 11 | 10 |
| A 50 | 2 | | J2-V* | 30 | N | | 2 | K6- 4 | 30 | N | 11 | 10 |
| A 51 | 2 | | J2-W* | 30 | N | | 2 | K6- 6 | 30 | N | 11 | 10 |
| A 52 | 2 | | J2-X* | 30 | N | | 2 | K6- 8 | 30 | N | 11 | 10 |
| A 53 | 2 | | J2-Y* | 30 | N | | 2 | K6-10 | 30 | N | 11 | 10 |
| A 54 | 2 | | J2-Z* | 30 | N | | 2 | K6-12 | 30 | N | 11 | 10 |

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GED WIRING HARNESS A + 1900094

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | INDIVIDUAL LENGTH 2 | FROM CIRCUIT POINT | CUT WIRE OR SHIELD STRIP WIRE OR JACKET 2 | T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CIRCUIT POINT | CUT WIRE OR SHIELD STRIP WIRE OR JACKET 2 | T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 1 | 1 | | J1-A | 30 | N | | 1 | E1 | 30 | Y | | 8 |
| A 2 | 2 | | J1-C | 30 | N | | 1 | K3-B | 30 | N | 11 | 9 |
| A 3 | 1 | | J1-D | 30 | N | | 1 | P1-D | 30 | N | | 5 |
| A 4 | 1 | | J1-E | 30 | N | | 1 | P1-E | 30 | N | | 5 |
| A 5 | 2 | | J1-F | 30 | N | | 1 | K3-A | 30 | N | 11 | 9 |
| A 6 | 2 | | J1-G | 30 | N | | 1 | K8-A | 30 | N | 11 | 16 |
| A 7 | 2 | | J1-H | 30 | N | | 1 | K15-A | 30 | N | 11 | 13 |
| A 8 | 2 | | J2-A | 30 | N | | 2 | K1- 2 | 30 | N | 11 | 29 |
| A 9 | 2 | | J2-B | 30 | N | | 2 | K1- 4 | 30 | N | 11 | 29 |
| A 10 | 2 | | J2-S | 30 | N | | 2 | K2-22 | 30 | N | 11 | 18 |
| A 11 | 2 | | J2-T | 30 | N | | 2 | K2-24 | 30 | N | 11 | 18 |
| A 12 | 2 | | J2-C | 30 | N | | 2 | K1-20 | 30 | N | 11 | 29 |
| A 13 | 2 | | J2-D | 30 | N | | 2 | K1-22 | 30 | N | 11 | 29 |
| A 14 | 2 | | J2-E | 30 | N | | 2 | K1-24 | 30 | N | 11 | 29 |
| A 15 | 2 | | J2-F | 30 | N | | 2 | K2- 2 | 30 | N | 11 | 19 |
| A 16 | 2 | | J2-G | 30 | N | | 2 | K2- 4 | 30 | N | 11 | 19 |
| A 17 | 2 | | J2-H | 30 | N | | 2 | K2- 6 | 30 | N | 11 | 19 |
| A 18 | 2 | | J2-J | 30 | N | | 2 | K2- 8 | 30 | N | 11 | 19 |

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GED WIRING HARNESS A + 1900094

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | INDIVIDUAL LENGTH 2 | FROM CIRCUIT POINT | CUT WIRE OR SHIELD STRIP WIRE OR JACKET 2 | T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CIRCUIT POINT | CUT WIRE OR SHIELD STRIP WIRE OR JACKET 2 | T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 55 | 2 | | J2-AA | 30 | N | | 2 | K6-14 | 30 | N | 11 | 10 |
| A 56 | 2 | | J2-BB | 30 | N | | 2 | K6-16 | 30 | N | 11 | 10 |
| A 57 | 2 | | J2-CC | 30 | N | | 2 | K6-18 | 30 | N | 11 | 10 |
| A 58 | 2 | | J2-DD | 30 | N | | 2 | K6-20 | 30 | N | 11 | 10 |
| A 59 | 2 | | J2-EE | 30 | N | | 2 | K6-22 | 30 | N | 11 | 10 |
| A 60 | 2 | | J2-FF | 30 | N | | 2 | K6-24 | 30 | N | 11 | 10 |
| A 61 | 2 | | J2-GG | 30 | N | | 2 | K9- 2 | 30 | N | 11 | 11 |
| A 62 | 2 | | J2-HH | 30 | N | | 2 | K9- 4 | 30 | N | 11 | 11 |
| A 63 | 2 | | J2-JJ | 30 | N | | 2 | K9- 6 | 30 | N | 11 | 11 |
| A 64 | 2 | | J2-KK | 30 | N | | 2 | K9- 8 | 30 | N | 11 | 11 |
| A 65 | 2 | | J2-LL | 30 | N | | 2 | K9-10 | 30 | N | 11 | 11 |
| A 66 | 2 | | J2-MM | 30 | N | | 2 | K9-12 | 30 | N | 11 | 11 |
| A 67 | 2 | | J2-NN | 30 | N | | 2 | K9-14 | 30 | N | 11 | 11 |
| A 68 | 2 | | J2-PP | 30 | N | | 2 | K9-16 | 30 | N | 11 | 11 |
| A 69 | 2 | | J3-N | 30 | N | | 3 | K7- 2 | 30 | N | 11 | 27 |
| A 70 | 2 | | J3-P | 30 | N | | 3 | K7- 4 | 30 | N | 11 | 27 |
| A 71 | 2 | | J3-R | 30 | N | | 3 | K7-20 | 30 | N | 11 | 27 |
| A 72 | 2 | | J3-S | 30 | N | | 3 | K7-22 | 30 | N | 11 | 27 |

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| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | FROM CIRCUIT POINT | FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2 | FROM T I N | FROM TERMINATION SPEC. 1 ITEM NO. | FROM NO. | TO CIRCUIT POINT | TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2 | TO T I N | TO TERMINATION SPEC 1 ITEM NO. | TO NO. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 91 | 2 | | J3-M* | 30 | N | | 3 | K10-12 | 30 | N | 11 | 26 | |
| A 92 | 2 | | J3-N* | 30 | N | | 3 | K10-18 | 30 | N | 11 | 26 | |
| A 93 | 2 | | J3-P* | 30 | N | | 3 | K10-20 | 30 | N | 11 | 26 | |
| A 94 | 2 | | J3-Q* | 30 | N | | 3 | K10-22 | 30 | N | 11 | 26 | |
| A 95 | 2 | | J3-R* | 30 | N | | 3 | K10-24 | 30 | N | 11 | 26 | |
| A 96 | 2 | | J3-S* | 30 | N | | 3 | K11-12 | 30 | N | 11 | 22 | |
| A 97 | 2 | | J3-T* | 30 | N | | 3 | K11-18 | 30 | N | 11 | 15 | |
| A 98 | 2 | | J3-U* | 30 | N | | 3 | K11-22 | 30 | N | 11 | 15 | |
| A 99 | 2 | | J3-V* | 30 | N | | 3 | K12- 2 | 30 | N | 11 | 12 | |
| A 100 | 2 | | J3-W* | 30 | N | | 3 | K12- 4 | 30 | N | 11 | 12 | |
| A 101 | 2 | | J3-X* | 30 | N | | 3 | K12- 6 | 30 | N | 11 | 12 | |
| A 102 | 2 | | J3-Y* | 30 | N | | 3 | K12-10 | 30 | N | 11 | 12 | |
| A 103 | 2 | | J3-Z* | 30 | N | | 3 | K12-12 | 30 | N | 11 | 12 | |
| A 104 | 2 | | J3-AA | 30 | N | | 3 | K12-14 | 30 | N | 11 | 12 | |
| A 105 | 2 | | J3-BB | 30 | N | | 3 | K12-16 | 30 | N | 11 | 12 | |
| A 106 | 2 | | J3-CC | 30 | N | | 3 | K12-18 | 30 | N | 11 | 12 | |
| A 107 | 2 | | J3-DD | 30 | N | | 3 | K12-20 | 30 | N | 11 | 12 | |
| A 108 | 2 | | J3-EE | 30 | N | | 3 | K12-22 | 30 | N | 11 | 12 | |

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| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | FROM CIRCUIT POINT | FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2 | FROM T I N | FROM TERMINATION SPEC. 1 ITEM NO. | FROM NO. | TO CIRCUIT POINT | TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2 | TO T I N | TO TERMINATION SPEC 1 ITEM NO. | TO NO. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 109 | 2 | | J3-FF | 30 | N | | 3 | K12-24 | 30 | N | 11 | 12 | |
| A 110 | 2 | | J3-GG | 30 | N | | 3 | K14- 2 | 30 | N | 11 | 23 | |
| A 111 | 2 | | J3-HH | 30 | N | | 3 | K14- 4 | 30 | N | 11 | 23 | |
| A 112 | 2 | | J3-JJ | 30 | N | | 3 | K14- 6 | 30 | N | 11 | 23 | |
| A 113 | 2 | | J3-KK | 30 | N | | 3 | K14- 8 | 30 | N | 11 | 23 | |
| A 114 | 2 | | J3-LL | 30 | N | | 3 | K14-10 | 30 | N | 11 | 23 | |
| A 115 | 2 | | J3-MM | 30 | N | | 3 | K14-12 | 30 | N | 11 | 23 | |
| A 116 | 2 | | J3-NN | 30 | N | | 3 | K14-14 | 30 | N | 11 | 14 | |
| A 117 | 2 | | J3-PP | 30 | N | | 3 | K14-16 | 30 | N | 11 | 14 | |
| A 118 | 2 | | J4-A | 30 | N | | 4 | K9-18 | 30 | N | 11 | 11 | |
| A 119 | 2 | | J4-B | 30 | N | | 4 | K9-20 | 30 | N | 11 | 11 | |
| A 120 | 2 | | J4-C | 30 | N | | 4 | K9-22 | 30 | N | 11 | 11 | |
| A 121 | 2 | | J4-D | 30 | N | | 4 | K9-24 | 30 | N | 11 | 11 | |
| A 122 | 2 | | J4-S* | 30 | N | | 4 | K15- 2 | 30 | N | 11 | 13 | |
| A 123 | 2 | | J4-T* | 30 | N | | 4 | K15- 4 | 30 | N | 11 | 13 | |
| A 124 | 2 | | J4-U* | 30 | N | | 4 | K15- 6 | 30 | N | 11 | 13 | |
| A 125 | 2 | | J4-Y* | 30 | N | | 4 | K15-10 | 30 | N | 11 | 13 | |
| A 126 | 2 | | J4-W* | 30 | N | | 4 | K15-12 | 30 | N | 11 | 13 | |

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GED WIRING HARNESS A + 1900094

| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | FROM CIRCUIT POINT | FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2 | FROM T I N | FROM TERMINATION SPEC. 1 ITEM NO. | FROM NO. | TO CIRCUIT POINT | TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2 | TO T I N | TO TERMINATION SPEC 1 ITEM NO. | TO NO. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 73 | 2 | | J3-T | 30 | N | | 3 | K7-24 | 30 | N | 11 | 27 | |
| A 74 | 2 | | J3-U | 30 | N | | 3 | K8- 2 | 30 | N | 11 | 21 | |
| A 75 | 2 | | J3-V | 30 | N | | 3 | K8- 4 | 30 | N | 11 | 21 | |
| A 76 | 2 | | J3-W | 30 | N | | 3 | K8- 6 | 30 | N | 11 | 21 | |
| A 77 | 2 | | J3-X | 30 | N | | 3 | K8- 8 | 30 | N | 11 | 21 | |
| A 78 | 2 | | J3-Y | 30 | N | | 3 | K8-10 | 30 | N | 11 | 21 | |
| A 79 | 2 | | J3-Z | 30 | N | | 3 | K8-12 | 30 | N | 11 | 21 | |
| A 80 | 2 | | J3-A* | 30 | N | | 3 | K8-14 | 30 | N | 11 | 16 | |
| A 81 | 2 | | J3-B* | 30 | N | | 3 | K8-16 | 30 | N | 11 | 16 | |
| A 82 | 2 | | J3-C* | 30 | N | | 3 | K8-18 | 30 | N | 11 | 16 | |
| A 83 | 2 | | J3-D* | 30 | N | | 3 | K8-20 | 30 | N | 11 | 16 | |
| A 84 | 2 | | J3-E* | 30 | N | | 3 | K8-22 | 30 | N | 11 | 16 | |
| A 85 | 2 | | J3-F* | 30 | N | | 3 | K8-24 | 30 | N | 11 | 16 | |
| A 86 | 2 | | J3-G* | 30 | N | | 3 | K10- 2 | 30 | N | 11 | 26 | |
| A 87 | 2 | | J3-H* | 30 | N | | 3 | K10- 4 | 30 | N | 11 | 26 | |
| A 88 | 2 | | J3-I* | 30 | N | | 3 | K10- 6 | 30 | N | 11 | 26 | |
| A 89 | 2 | | J3-J* | 30 | N | | 3 | K10- 8 | 30 | N | 11 | 26 | |
| A 90 | 2 | | J3-K* | 30 | N | | 3 | K10-10 | 30 | N | 11 | 26 | |

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GED WIRING HARNESS A + 1900094

| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | FROM CIRCUIT POINT | FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2 | FROM T I N | FROM TERMINATION SPEC. 1 ITEM NO. | FROM NO. | TO CIRCUIT POINT | TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET 2 | TO T I N | TO TERMINATION SPEC 1 ITEM NO. | TO NO. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 127 | 2 | | J4-X* | 30 | N | | 4 | K15-14 | 30 | N | 11 | 13 | |
| A 128 | 2 | | J4-Y* | 30 | N | | 4 | K15-18 | 30 | N | 11 | 13 | |
| A 129 | 2 | | J4-AA | 30 | N | | 4 | K15-22 | 30 | N | 11 | 13 | |
| A 130 | 2 | | J4-BB | 30 | N | | 4 | K13- 2 | 30 | N | 11 | 25 | |
| A 131 | 2 | | J4-CC | 30 | N | | 4 | K13- 4 | 30 | N | 11 | 25 | |
| A 132 | 2 | | J4-DD | 30 | N | | 4 | K13- 6 | 30 | N | 11 | 25 | |
| A 133 | 2 | | J4-EE | 30 | N | | 4 | K13-10 | 30 | N | 11 | 25 | |
| A 134 | 2 | | J4-FF | 30 | N | | 4 | K13-12 | 30 | N | 11 | 25 | |
| A 135 | 2 | | J4-GG | 30 | N | | 4 | K13-14 | 30 | N | 11 | 25 | |
| A 136 | 2 | | J4-HH | 30 | N | | 4 | K13-18 | 30 | N | 11 | 25 | |
| A 137 | 2 | | J4-JJ | 30 | N | | 4 | K13-20 | 30 | N | 11 | 25 | |
| A 138 | 2 | | J4-KK | 30 | N | | 4 | K13-22 | 30 | N | 11 | 25 | |
| A 139 | 2 | | J4-LL | 30 | N | | 4 | K16-14 | 30 | N | 11 | 24 | |
| A 140 | 2 | | J4-MM | 30 | N | | 4 | K16-16 | 30 | N | 11 | 24 | |
| A 141 | 2 | | J4-Z* | 30 | N | | 4 | K15-20 | 30 | N | 11 | 13 | |
| A 142 | 2 | | J4-NN | 30 | N | | 4 | K16-18 | 30 | N | 11 | 24 | |
| A 143 | 2 | | J4-PP | 30 | N | | 4 | K16-20 | 30 | N | 11 | 24 | |
| A 144 | 2 | | J5-A | 30 | N | | 7 | K1- 1 | 30 | N | 11 | 29 | |

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| CONDUCTOR | | | FROM | | | | | TO | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | INDIVIDUAL LENGTH | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | | TIN | TERMINATION SPEC. ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | | TIN | TERMINATION SPEC ITEM NO. | NO. | |
| A 163 | 2 | | J5-W | 30 | N | | 7 | K2-13 | 30 | N | 11 | 18 | |
| A 164 | 2 | | J5-X | 30 | N | | 7 | K10-13 | 30 | N | 11 | 26 | |
| A 165 | 2 | | J5-Y | 30 | N | | 7 | K2-15 | 30 | N | 11 | 18 | |
| A 166 | 2 | | J5-Z | 30 | N | | 7 | K2-17 | 30 | N | 11 | 18 | |
| A 167 | 2 | | J5-A* | 30 | N | | 7 | K2-19 | 30 | N | 11 | 18 | |
| A 168 | 2 | | J5-B* | 30 | N | | 7 | K2-21 | 30 | N | 11 | 18 | |
| A 169 | 2 | | J5-C* | 30 | N | | 7 | K2-23 | 30 | N | 11 | 18 | |
| A 170 | 2 | | J5-D* | 30 | N | | 7 | K4- 1 | 30 | N | 11 | 28 | |
| A 171 | 2 | | J5-E* | 30 | N | | 7 | K4- 3 | 30 | N | 11 | 28 | |
| A 172 | 2 | | J5-F* | 30 | N | | 7 | K4- 5 | 30 | N | 11 | 28 | |
| A 173 | 2 | | J5-G* | 30 | N | | 7 | K4- 7 | 30 | N | 11 | 28 | |
| A 174 | 2 | | J5-H* | 30 | N | | 7 | K4- 9 | 30 | N | 11 | 28 | |
| A 175 | 2 | | J5-I* | 30 | N | | 7 | K10-15 | 30 | N | 11 | 26 | |
| A 176 | 2 | | J5-J* | 30 | N | | 7 | K4-11 | 30 | N | 11 | 28 | |
| A 177 | 2 | | J5-K* | 30 | N | | 7 | K4-13 | 30 | N | 11 | 28 | |
| A 178 | 2 | | J5-M* | 30 | N | | 7 | K4-15 | 30 | N | 11 | 28 | |
| A 179 | 2 | | J5-N* | 30 | N | | 7 | K4-17 | 30 | N | 11 | 28 | |
| A 180 | 2 | | J5-P* | 30 | N | | 7 | K4-19 | 30 | N | 11 | 28 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1900094
SCALE - NONE
REV LTR +
SHEET 14 OF 25

MIL 2085 - 4-63 WIR

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GED WIRING HARNESS A + 1900094

| CONDUCTOR | | | FROM | | | | | TO | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | INDIVIDUAL LENGTH | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | | TIN | TERMINATION SPEC. ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | | TIN | TERMINATION SPEC ITEM NO. | NO. | |
| A 181 | 2 | | J5-Q* | 30 | N | | 7 | K4-21 | 30 | N | 11 | 28 | |
| A 182 | 2 | | J5-R* | 30 | N | | 7 | K4-23 | 30 | N | 11 | 28 | |
| A 183 | 2 | | J5-S* | 30 | N | | 7 | K5- 1 | 30 | N | 11 | 20 | |
| A 184 | 2 | | J5-T* | 30 | N | | 7 | K5- 3 | 30 | N | 11 | 20 | |
| A 185 | 2 | | J5-U* | 30 | N | | 7 | K5- 5 | 30 | N | 11 | 20 | |
| A 186 | 2 | | J5-V* | 30 | N | | 7 | K11-13 | 30 | N | 11 | 15 | |
| A 187 | 2 | | J5-W* | 30 | N | | 7 | K5- 7 | 30 | N | 11 | 20 | |
| A 188 | 2 | | J5-X* | 30 | N | | 7 | K5- 9 | 30 | N | 11 | 20 | |
| A 189 | 2 | | J5-Y* | 30 | N | | 7 | K5-11 | 30 | N | 11 | 20 | |
| A 190 | 2 | | J5-Z* | 30 | N | | 7 | K5-13 | 30 | N | 11 | 17 | |
| A 191 | 2 | | J5-AA | 30 | N | | 7 | K5-15 | 30 | N | 11 | 17 | |
| A 192 | 2 | | J5-BB | 30 | N | | 7 | K5-17 | 30 | N | 11 | 17 | |
| A 193 | 2 | | J5-CC | 30 | N | | 7 | K5-19 | 30 | N | 11 | 17 | |
| A 194 | 2 | | J5-DD | 30 | N | | 7 | K5-21 | 30 | N | 11 | 17 | |
| A 195 | 2 | | J5-EE | 30 | N | | 7 | K5-23 | 30 | N | 11 | 17 | |
| A 196 | 2 | | J5-FF | 30 | N | | 7 | K3- 1 | 30 | N | 11 | 9 | |
| A 197 | 2 | | J5-GG | 30 | N | | 7 | K16- 9 | 30 | N | 11 | 24 | |
| A 198 | 2 | | J5-HH | 30 | N | | 7 | K3- 3 | 30 | N | 11 | 9 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1900094
SCALE - NONE
REV LTR +
SHEET 15 OF 25

MIL 2085 - 4-63 WIR

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GED WIRING HARNESS A + 1900094

| CONDUCTOR | | | FROM | | | | | TO | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | INDIVIDUAL LENGTH | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | | TIN | TERMINATION SPEC. ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | | TIN | TERMINATION SPEC ITEM NO. | NO. | |
| A 145 | 2 | | J5-B | 30 | N | | 7 | K1- 3 | 30 | N | 11 | 29 | |
| A 146 | 2 | | J5-C | 30 | N | | 7 | K1- 5 | 30 | N | 11 | 29 | |
| A 147 | 2 | | J5-D | 30 | N | | 7 | K1- 7 | 30 | N | 11 | 29 | |
| A 148 | 2 | | J5-E | 30 | N | | 7 | K1- 9 | 30 | N | 11 | 29 | |
| A 149 | 2 | | J5-F | 30 | N | | 7 | K1-11 | 30 | N | 11 | 29 | |
| A 150 | 2 | | J5-G | 30 | N | | 7 | K1-13 | 30 | N | 11 | 29 | |
| A 151 | 2 | | J5-H | 30 | N | | 7 | K1-15 | 30 | N | 11 | 29 | |
| A 152 | 2 | | J5-J | 30 | N | | 7 | K1-17 | 30 | N | 11 | 29 | |
| A 153 | 2 | | J5-K | 30 | N | | 7 | K10-11 | 30 | N | 11 | 26 | |
| A 154 | 2 | | J5-L | 30 | N | | 7 | K1-19 | 30 | N | 11 | 29 | |
| A 155 | 2 | | J5-M | 30 | N | | 7 | K1-21 | 30 | N | 11 | 29 | |
| A 156 | 2 | | J5-N | 30 | N | | 7 | K1-23 | 30 | N | 11 | 29 | |
| A 157 | 2 | | J5-P | 30 | N | | 7 | K2- 1 | 30 | N | 11 | 19 | |
| A 158 | 2 | | J5-R | 30 | N | | 7 | K2- 3 | 30 | N | 11 | 19 | |
| A 159 | 2 | | J5-S | 30 | N | | 7 | K2- 5 | 30 | N | 11 | 19 | |
| A 160 | 2 | | J5-T | 30 | N | | 7 | K2- 7 | 30 | N | 11 | 19 | |
| A 161 | 2 | | J5-U | 30 | N | | 7 | K2- 9 | 30 | N | 11 | 19 | |
| A 162 | 2 | | J5-V | 30 | N | | 7 | K2-11 | 30 | N | 11 | 19 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1900094
SCALE - NONE
REV LTR +
SHEET 13 OF 25

MIL 2085 - 4-63 WIR

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GED WIRING HARNESS A + 1900094

| CONDUCTOR | | | FROM | | | | | TO | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | INDIVIDUAL LENGTH | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | | TIN | TERMINATION SPEC. ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | | TIN | TERMINATION SPEC ITEM NO. | NO. | |
| A 199 | 2 | | J6-F | 30 | N | | 6 | K3-11 | 30 | N | 11 | 9 | |
| A 200 | 2 | | J6-E | 30 | N | | 6 | K3-13 | 30 | N | 11 | 9 | |
| A 201 | 2 | | J6-D | 30 | N | | 6 | K3-15 | 30 | N | 11 | 9 | |
| A 202 | 2 | | J6-C | 30 | N | | 6 | K11-15 | 30 | N | 11 | 15 | |
| A 203 | 2 | | J6-G | 30 | N | | 6 | K3-17 | 30 | N | 11 | 9 | |
| A 204 | 2 | | J6-H | 30 | N | | 6 | K3-19 | 30 | N | 11 | 9 | |
| A 205 | 2 | | J6-J | 30 | N | | 6 | K3-21 | 30 | N | 11 | 9 | |
| A 206 | 2 | | J6-K | 30 | N | | 6 | K3-23 | 30 | N | 11 | 9 | |
| A 207 | 2 | | J6-L | 30 | N | | 6 | K16-11 | 30 | N | 11 | 24 | |
| A 208 | 2 | | J6-M | 30 | N | | 6 | K6- 1 | 30 | N | 11 | 10 | |
| A 209 | 2 | | J6-N | 30 | N | | 6 | K6- 3 | 30 | N | 11 | 10 | |
| A 210 | 2 | | J6-P | 30 | N | | 6 | K6- 5 | 30 | N | 11 | 10 | |
| A 211 | 2 | | J6-R | 30 | N | | 6 | K6- 7 | 30 | N | 11 | 10 | |
| A 212 | 2 | | J6-S | 30 | N | | 6 | K11-17 | 30 | N | 11 | 15 | |
| A 213 | 2 | | J6-T | 30 | N | | 6 | K6- 9 | 30 | N | 11 | 10 | |
| A 214 | 2 | | J6-U | 30 | N | | 6 | K6-11 | 30 | N | 11 | 10 | |
| A 215 | 2 | | J6-V | 30 | N | | 6 | K6-13 | 30 | N | 11 | 10 | |
| A 216 | 2 | | J6-W | 30 | N | | 6 | K6-15 | 30 | N | 11 | 10 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1900094
SCALE - NONE
REV LTR +
SHEET 16 OF 25

MIL 2085 - 4-63 WIR

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

GED WIRING HARNESS A + 1900094

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | | T I N | FROM TERMINATION SPEC. ITEM NO. | NO. | TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | | T I N | TO TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A 235 | 2 | K1- 1 | 30 | N | 11 | 29 | K7- 1 | 30 | N | 11 | 27 |
| A 236 | 2 | K1- 3 | 30 | N | 11 | 29 | K7- 3 | 30 | N | 11 | 27 |
| A 237 | 2 | K1- 5 | 30 | N | 11 | 29 | K7- 5 | 30 | N | 11 | 27 |
| A 238 | 2 | K1- 7 | 30 | N | 11 | 29 | K7- 7 | 30 | N | 11 | 27 |
| A 239 | 2 | K1- 9 | 30 | N | 11 | 29 | K7- 9 | 30 | N | 11 | 27 |
| A 240 | 2 | K1-11 | 30 | N | 11 | 29 | K7-11 | 30 | N | 11 | 27 |
| A 241 | 2 | K1-13 | 30 | N | 11 | 29 | K7-13 | 30 | N | 11 | 27 |
| A 242 | 2 | K1-15 | 30 | N | 11 | 29 | K7-15 | 30 | N | 11 | 27 |
| A 243 | 2 | K1-17 | 30 | N | 11 | 29 | K7-17 | 30 | N | 11 | 27 |
| A 244 | 2 | K1-19 | 30 | N | 11 | 29 | K7-19 | 30 | N | 11 | 27 |
| A 245 | 2 | K1-21 | 30 | N | 11 | 29 | K7-21 | 30 | N | 11 | 27 |
| A 246 | 2 | K1-23 | 30 | N | 11 | 29 | K7-23 | 30 | N | 11 | 27 |
| A 247 | 2 | K2- 1 | 30 | N | 11 | 19 | K8- 1 | 30 | N | 11 | 21 |
| A 248 | 2 | K2- 3 | 30 | N | 11 | 19 | K8- 3 | 30 | N | 11 | 21 |
| A 249 | 2 | K2- 5 | 30 | N | 11 | 19 | K8- 5 | 30 | N | 11 | 21 |
| A 250 | 2 | K2- 7 | 30 | N | 11 | 19 | K8- 7 | 30 | N | 11 | 21 |
| A 251 | 2 | K2- 9 | 30 | N | 11 | 19 | K8- 9 | 30 | N | 11 | 21 |
| A 252 | 2 | K2-11 | 30 | N | 11 | 19 | K8-11 | 30 | N | 11 | 21 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900094

SCALE - NONE | REV LTR + | SHEET 18 OF 25

MIL 2085 - 4-63 WIR

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GED WIRING HARNESS A + 1900094

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | | T I N | FROM TERMINATION SPEC. ITEM NO. | NO. | TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | | T I N | TO TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A 253 | 2 | K2-13 | 30 | N | 11 | 18 | K8-13 | 30 | N | 11 | 16 |
| A 254 | 2 | K2-17 | 30 | N | 11 | 18 | K8-17 | 30 | N | 11 | 16 |
| A 255 | 2 | K2-19 | 30 | N | 11 | 18 | K8-19 | 30 | N | 11 | 16 |
| A 256 | 2 | K2-21 | 30 | N | 11 | 18 | K8-21 | 30 | N | 11 | 16 |
| A 257 | 2 | K2-23 | 30 | N | 11 | 18 | K8-23 | 30 | N | 11 | 16 |
| A 258 | 2 | K3- 1 | 30 | N | 11 | 9 | K11- 9 | 30 | N | 11 | 22 |
| A 259 | 2 | K3- 3 | 30 | N | 11 | 9 | K11-11 | 30 | N | 11 | 22 |
| A 260 | 2 | K3-11 | 30 | N | 11 | 9 | K16-19 | 30 | N | 11 | 24 |
| A 261 | 2 | K3-13 | 30 | N | 11 | 9 | K11-21 | 30 | N | 11 | 15 |
| A 262 | 2 | K3-15 | 30 | N | 11 | 9 | K8-15 | 30 | N | 11 | 16 |
| A 263 | 2 | K3-[illegible] | 30 | N | 11 | 9 | K12- 1 | 30 | N | 11 | 12 |
| A 264 | 2 | K3-19 | 30 | N | 11 | 9 | K12- 3 | 30 | N | 11 | 12 |
| A 265 | 2 | K3-21 | 30 | N | 11 | 9 | K12- 5 | 30 | N | 11 | 12 |
| A 266 | 2 | K3-23 | 30 | N | 11 | 9 | K12- 7 | 30 | N | 11 | 12 |
| A 267 | 2 | K4- 1 | 30 | N | 11 | 28 | K10- 1 | 30 | N | 11 | 26 |
| A 268 | 2 | K4- 3 | 30 | N | 11 | 28 | K10- 3 | 30 | N | 11 | 26 |
| A 269 | 2 | K4- 5 | 30 | N | 11 | 28 | K10- 5 | 30 | N | 11 | 26 |
| A 270 | 2 | K4- 7 | 30 | N | 11 | 28 | K10- 7 | 30 | N | 11 | 26 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900094

SCALE - NONE | REV LTR + | SHEET 19 OF 25

MIL 2085 - 4-63 WIR

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GED WIRING HARNESS A + 1900094

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | | T I N | FROM TERMINATION SPEC. ITEM NO. | NO. | TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | | T I N | TO TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A 217 | 2 | J6-Y | 30 | N | | 6 | K6-17 | 30 | N | 11 | 10 |
| A 218 | 2 | J6-Z | 30 | N | | 6 | K6-19 | 30 | N | 11 | 10 |
| A 219 | 2 | J6-A* | 30 | N | | 6 | K6-21 | 30 | N | 11 | 10 |
| A 220 | 2 | J6-B* | 30 | N | | 6 | K6-23 | 30 | N | 11 | 10 |
| A 221 | 2 | J6-D* | 30 | N | | 6 | K9- 1 | 30 | N | 11 | 11 |
| A 222 | 2 | J6-E* | 30 | N | | 6 | K9- 3 | 30 | N | 11 | 11 |
| A 223 | 2 | J6-F* | 30 | N | | 6 | K9- 5 | 30 | N | 11 | 11 |
| A 224 | 2 | J6-G* | 30 | N | | 6 | K9- 7 | 30 | N | 11 | 11 |
| A 225 | 2 | J6-I* | 30 | N | | 6 | K9- 9 | 30 | N | 11 | 11 |
| A 226 | 2 | J6-J* | 30 | N | | 6 | K9-11 | 30 | N | 11 | 11 |
| A 227 | 2 | J6-K* | 30 | N | | 6 | K9-13 | 30 | N | 11 | 11 |
| A 228 | 2 | J6-M* | 30 | N | | 6 | K9-15 | 30 | N | 11 | 11 |
| A 229 | 2 | J6-P* | 30 | N | | 6 | K9-17 | 30 | N | 11 | 11 |
| A 230 | 2 | J6-Q* | 30 | N | | 6 | K9-19 | 30 | N | 11 | 11 |
| A 231 | 2 | J6-R* | 30 | N | | 6 | K9-21 | 30 | N | 11 | 11 |
| A 232 | 2 | J6-S* | 30 | N | | 6 | K9-23 | 30 | N | 11 | 11 |
| A 233 | 2 | J6-T* | 30 | N | | 6 | K11-19 | 30 | N | 11 | 15 |
| A 234 | 1 | P1-A | 30 | N | | 5 | E1 | 30 | Y | | 8 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900094

SCALE - NONE | REV LTR + | SHEET 17 OF 25

MIL 2085 - 4-63 WIR

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GED WIRING HARNESS A + 1900094

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | | T I N | FROM TERMINATION SPEC. ITEM NO. | NO. | TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | | T I N | TO TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A 271 | 2 | K4- 9 | 30 | N | 11 | 28 | K10- 9 | 30 | N | 11 | 26 |
| A 272 | 2 | K5- 9 | 30 | N | 11 | 20 | K10-17 | 30 | N | 11 | 26 |
| A 273 | 2 | K5-11 | 30 | N | 11 | 20 | K10-19 | 30 | N | 11 | 26 |
| A 274 | 2 | K5-13 | 30 | N | 11 | 17 | K10-21 | 30 | N | 11 | 26 |
| A 275 | 2 | K5-15 | 30 | N | 11 | 17 | K10-23 | 30 | N | 11 | 26 |
| A 276 | 2 | K5-17 | 30 | N | 11 | 17 | K11- 1 | 30 | N | 11 | 22 |
| A 277 | 2 | K5-19 | 30 | N | 11 | 17 | K11- 3 | 30 | N | 11 | 22 |
| A 278 | 2 | K5-21 | 30 | N | 11 | 17 | K11- 5 | 30 | N | 11 | 22 |
| A 279 | 2 | K5-23 | 30 | N | 11 | 17 | K11- 9 | 30 | N | 11 | 22 |
| A 280 | 2 | K6- 1 | 30 | N | 11 | 10 | K15- 1 | 30 | N | 11 | 13 |
| A 281 | 2 | K6- 3 | 30 | N | 11 | 10 | K15- 3 | 30 | N | 11 | 13 |
| A 282 | 2 | K6- 5 | 30 | N | 11 | 10 | K15- 5 | 30 | N | 11 | 13 |
| A 283 | 2 | K6- 7 | 30 | N | 11 | 10 | K15- 7 | 30 | N | 11 | 13 |
| A 284 | 2 | K6- 9 | 30 | N | 11 | 10 | K12- 9 | 30 | N | 11 | 12 |
| A 285 | 2 | K6-11 | 30 | N | 11 | 10 | K12-11 | 30 | N | 11 | 12 |
| A 286 | 2 | K6-13 | 30 | N | 11 | 10 | K12-13 | 30 | N | 11 | 12 |
| A 287 | 2 | K6-15 | 30 | N | 11 | 10 | K12-15 | 30 | N | 11 | 12 |
| A 288 | 2 | K6-17 | 30 | N | 11 | 10 | K12-17 | 30 | N | 11 | 12 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900094

SCALE - NONE | REV LTR + | SHEET 20 OF 25

MIL 2085 - 4-63 WIR

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

GED WIRING HARNESS A + 1900094

| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | FROM: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | TO: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 307 | 2 | | K8-B | 30 | N | 11 | 16 | K7-B | 30 | N | 11 | 27 |
| A 308 | 2 | | K7-B | 30 | N | 11 | 27 | K10-B | 30 | N | 11 | 26 |
| A 309 | 2 | | K15-23 | 30 | N | 11 | 13 | K12-23 | 30 | N | 11 | 12 |
| A 310 | 2 | | K8-15 | 30 | N | 11 | 16 | K16-17 | 30 | N | 11 | 24 |
| A 311 | 2 | | K9- 1 | 30 | N | 11 | 11 | K14- 1 | 30 | N | 11 | 23 |
| A 312 | 2 | | K9- 3 | 30 | N | 11 | 11 | K14- 3 | 30 | N | 11 | 23 |
| A 313 | 2 | | K9- 5 | 30 | N | 11 | 11 | K14- 5 | 30 | N | 11 | 23 |
| A 314 | 2 | | K9- 7 | 30 | N | 11 | 11 | K14- 7 | 30 | N | 11 | 23 |
| A 315 | 2 | | K9- 9 | 30 | N | 11 | 11 | K14- 9 | 30 | N | 11 | 23 |
| A 316 | 2 | | K9-11 | 30 | N | 11 | 11 | K14-11 | 30 | N | 11 | 23 |
| A 317 | 2 | | K9-13 | 30 | N | 11 | 11 | K14-13 | 30 | N | 11 | 14 |
| A 318 | 2 | | K9-15 | 30 | N | 11 | 11 | K14-15 | 30 | N | 11 | 14 |
| A 319 | 2 | | K9-17 | 30 | N | 11 | 11 | K13-17 | 30 | N | 11 | 25 |
| A 320 | 2 | | K9-19 | 30 | N | 11 | 11 | K13-19 | 30 | N | 11 | 25 |
| A 321 | 2 | | K9-21 | 30 | N | 11 | 11 | K13-21 | 30 | N | 11 | 25 |
| A 322 | 2 | | K9-23 | 30 | N | 11 | 11 | K13-23 | 30 | N | 11 | 25 |
| A 323 | 2 | | K10-11 | 30 | N | 11 | 26 | K16- 1 | 30 | N | 11 | 24 |
| A 324 | 2 | | K10-13 | 30 | N | 11 | 26 | K16- 3 | 30 | N | 11 | 24 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1900094
SCALE - NONE REV LTR + SHEET 22 OF 25

MIL 2085 - 4-63 WIR

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GED WIRING HARNESS A + 1900094

| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | FROM: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | TO: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 325 | 2 | | K10-15 | 30 | N | 11 | 26 | K16- 5 | 30 | N | 11 | 24 |
| A 326 | 2 | | K11-A | 30 | N | 11 | 15 | K10-A | 30 | N | 11 | 26 |
| A 327 | 2 | | K11-B | 30 | N | 11 | 15 | K10-B | 30 | N | 11 | 26 |
| A 328 | 2 | | K11-11 | 30 | N | 11 | 22 | K16-13 | 30 | N | 11 | 24 |
| A 329 | 2 | | K11-13 | 30 | N | 11 | 15 | K16- 7 | 30 | N | 11 | 24 |
| A 330 | 2 | | K11-21 | 30 | N | 11 | 15 | K16-15 | 30 | N | 11 | 24 |
| A 331 | 2 | | K11-10 | 30 | N | 11 | 22 | K12- 8 | 30 | N | 11 | 12 |
| A 332 | 2 | | K11-A | 30 | N | 11 | 15 | K12-A | 30 | N | 11 | 12 |
| A 333 | 2 | | K11-B | 30 | N | 11 | 15 | K12-B | 30 | N | 11 | 12 |
| A 334 | 2 | | K12- 9 | 30 | N | 11 | 12 | K15- 9 | 30 | N | 11 | 13 |
| A 335 | 2 | | K12-11 | 30 | N | 11 | 12 | K15-11 | 30 | N | 11 | 13 |
| A 336 | 2 | | K12-13 | 30 | N | 11 | 12 | K15-13 | 30 | N | 11 | 13 |
| A 337 | 2 | | K12-15 | 30 | N | 11 | 12 | K15-15 | 30 | N | 11 | 13 |
| A 338 | 2 | | K12-17 | 30 | N | 11 | 12 | K15-17 | 30 | N | 11 | 13 |
| A 339 | 2 | | K12-19 | 30 | N | 11 | 12 | K15-19 | 30 | N | 11 | 13 |
| A 340 | 2 | | K12-21 | 30 | N | 11 | 12 | K15-21 | 30 | N | 11 | 13 |
| A 341 | 2 | | K14-A | 30 | N | 11 | 14 | K12-A | 30 | N | 11 | 12 |
| A 342 | 2 | | K15-B | 30 | N | 11 | 13 | K12-B | 30 | N | 11 | 12 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1900094
SCALE - NONE REV LTR + SHEET 23 OF 25

MIL 2085 - 4-63 WIR

---

GED WIRING HARNESS A + 1900094

| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | FROM: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | TO: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 289 | 2 | | K6-19 | 30 | N | 11 | 10 | K12-19 | 30 | N | 11 | 12 |
| A 290 | 2 | | K6-21 | 30 | N | 11 | 10 | K12-21 | 30 | N | 11 | 12 |
| A 291 | 2 | | K1-A | 30 | N | 11 | 29 | K4-A | 30 | N | 11 | 28 |
| A 292 | 2 | | K2-A | 30 | N | 11 | 18 | K1-A | 30 | N | 11 | 29 |
| A 293 | 2 | | K2-B | 30 | N | 11 | 18 | K1-B | 30 | N | 11 | 29 |
| A 294 | 2 | | K1-B | 30 | N | 11 | 29 | K4-B | 30 | N | 11 | 28 |
| A 295 | 2 | | K2-A | 30 | N | 11 | 18 | K3-A | 30 | N | 11 | 9 |
| A 296 | 2 | | K2-B | 30 | N | 11 | 18 | K3-B | 30 | N | 11 | 9 |
| A 297 | 2 | | K4-A | 30 | N | 11 | 28 | K5-A | 30 | N | 11 | 17 |
| A 298 | 2 | | K4-B | 30 | N | 11 | 28 | K5-B | 30 | N | 11 | 17 |
| A 299 | 2 | | K6-A | 30 | N | 11 | 10 | K5-A | 30 | N | 11 | 17 |
| A 300 | 2 | | K6-B | 30 | N | 11 | 10 | K5-B | 30 | N | 11 | 17 |
| A 301 | 2 | | K6-A | 30 | N | 11 | 10 | K9-A | 30 | N | 11 | 11 |
| A 302 | 2 | | K6-B | 30 | N | 11 | 10 | K9-B | 30 | N | 11 | 11 |
| A 303 | 2 | | K6-23 | 30 | N | 11 | 10 | K12-23 | 30 | N | 11 | 12 |
| A 304 | 2 | | K8-B | 30 | N | 11 | 16 | K9-B | 30 | N | 11 | 11 |
| A 305 | 2 | | K7-A | 30 | N | 11 | 27 | K10-A | 30 | N | 11 | 26 |
| A 306 | 2 | | K8-A | 30 | N | 11 | 16 | K7-A | 30 | N | 11 | 27 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1900094
SCALE - NONE REV LTR + SHEET 21 OF 25

MIL 2085 - 4-63 WIR

---

GED WIRING HARNESS A + 1900094

| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | FROM: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | TO: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 343 | 2 | | K14- 1 | 30 | N | 11 | 23 | K13- 1 | 30 | N | 11 | 25 |
| A 344 | 2 | | K14- 3 | 30 | N | 11 | 23 | K13- 3 | 30 | N | 11 | 25 |
| A 345 | 2 | | K14- 5 | 30 | N | 11 | 23 | K13- 5 | 30 | N | 11 | 25 |
| A 346 | 2 | | K14- 7 | 30 | N | 11 | 23 | K13- 7 | 30 | N | 11 | 25 |
| A 347 | 2 | | K14- 9 | 30 | N | 11 | 23 | K13- 9 | 30 | N | 11 | 25 |
| A 348 | 2 | | K14-11 | 30 | N | 11 | 23 | K13-11 | 30 | N | 11 | 25 |
| A 349 | 2 | | K14-13 | 30 | N | 11 | 14 | K13-13 | 30 | N | 11 | 25 |
| A 350 | 2 | | K14-15 | 30 | N | 11 | 14 | K13-15 | 30 | N | 11 | 25 |
| A 351 | 2 | | K14-B | 30 | N | 11 | 14 | K15-B | 30 | N | 11 | 13 |
| A 352 | 2 | | K14-B | 30 | N | 11 | 14 | K13-B | 30 | N | 11 | 25 |
| A 353 | 2 | | K13- 8 | 30 | N | 11 | 25 | K15- 8 | 30 | N | 11 | 13 |
| A 354 | 2 | | K13-A | 30 | N | 11 | 25 | K15-A | 30 | N | 11 | 13 |
| A 355 | 2 | | K13-24 | 30 | N | 11 | 25 | K16-16 | 30 | N | 11 | 24 |
| A 356 | 2 | | K13-A | 30 | N | 11 | 25 | K16-A | 30 | N | 11 | 24 |
| A 357 | 2 | | K13-B | 30 | N | 11 | 25 | K16-B | 30 | N | 11 | 24 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

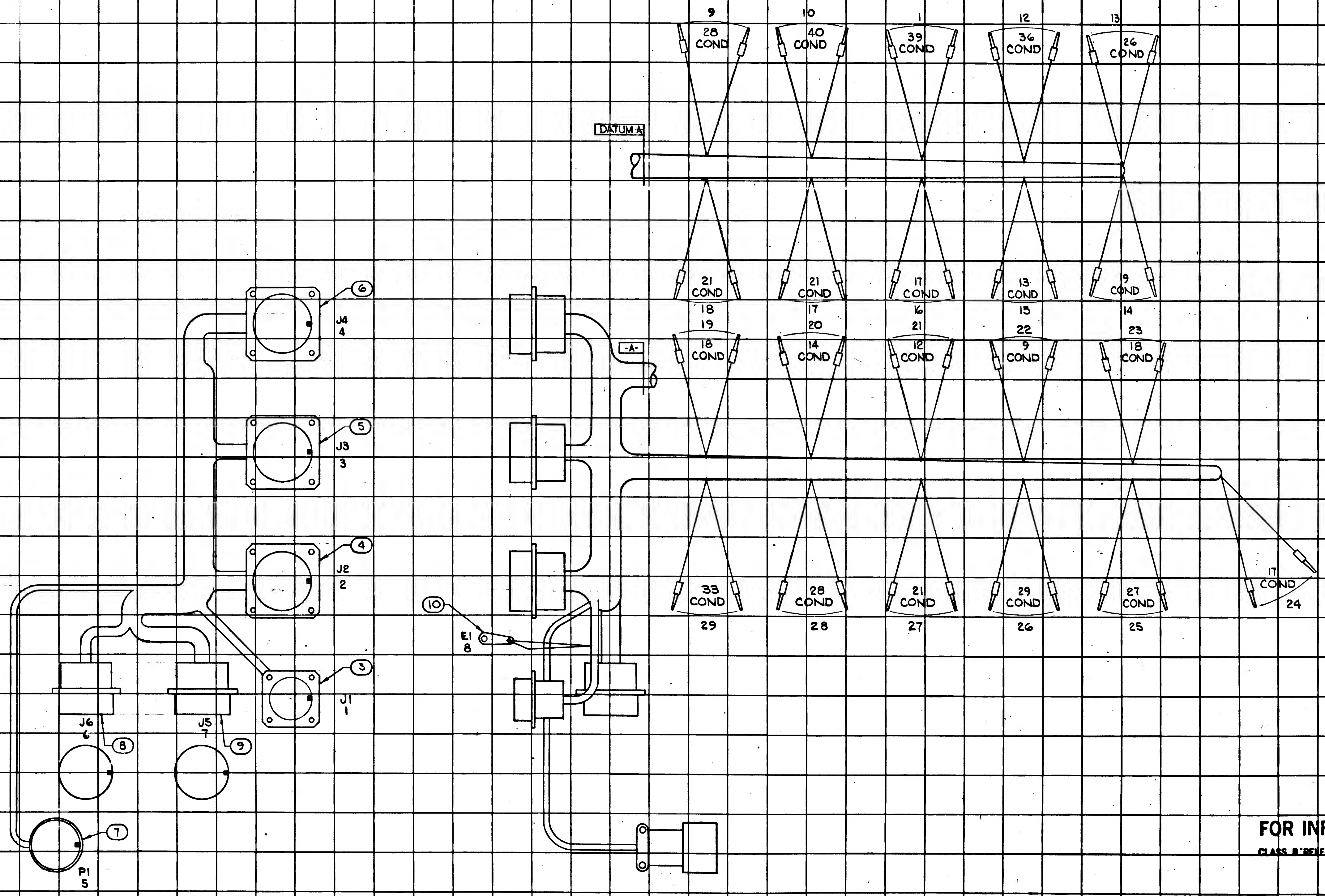
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1900094
SCALE - NONE REV LTR + SHEET 24 OF 25

MIL 2085 - 4-63 WIR

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

| REVISIONS | | | | |
|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | DATE | APPD. |
| | | CHG NO. | | |



**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 23897 DATE 9/15/63

| | |
|---|---|
| NEXT ASSY | USED ON |
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN S. Gone DATE 21 AUG 63
M. Manning 19 SEP 63
CHECKED
APPROVAL H. Williams 19 SEP 63
APPROVAL L. Gelman 9/11/63
NASA APPROVAL
MIT APPROVAL 15 Oct 63

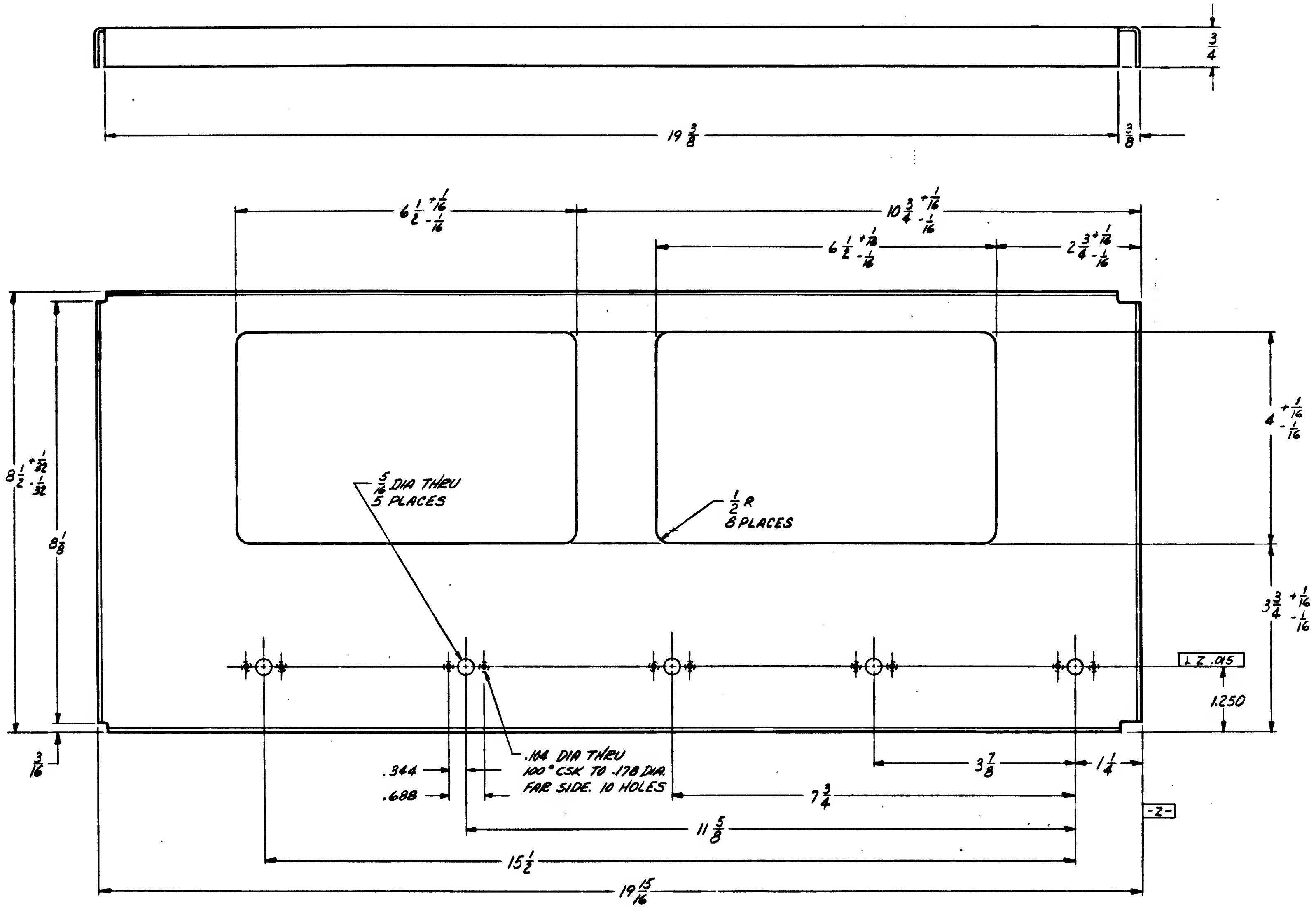
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS "A"

CODE IDENT NO.
SIZE E
1900094
SCALE FULL
SHEET 25 OF 25

INCHES
PHOTOGRAPHIC SCALE ONLY

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| A | | CHANGE IN ACCORDANCE WITH<br>MXC 187499<br>PER TDRR 03874 | | 25 [illegible] 63 | [illegible] |



DETAIL OF ① SHOWN

DETAIL OF ② OPPOSITE

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. [illegible] DATE [illegible]

| | |
|---|---|
| 1900052-011 | 1900004 |
| NEXT ASSY | USED ON |
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

| FRACTIONS | DECIMALS | ANGLES |
|---|---|---|
| + 1/64 | + .005 | + 1° |
| - 1/64 | - .005 | - 1° |

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN T. Vosmalla DATE 9 May 63
CHECKED Ed Foster 16 MAY 63
APPROVAL A. Smith 17 MAY 63
APPROVAL [illegible] 17 MAY 63
NASA APPROVAL [illegible] 6/5/63
[illegible] 6/4/63
MIT APPROVAL [illegible]

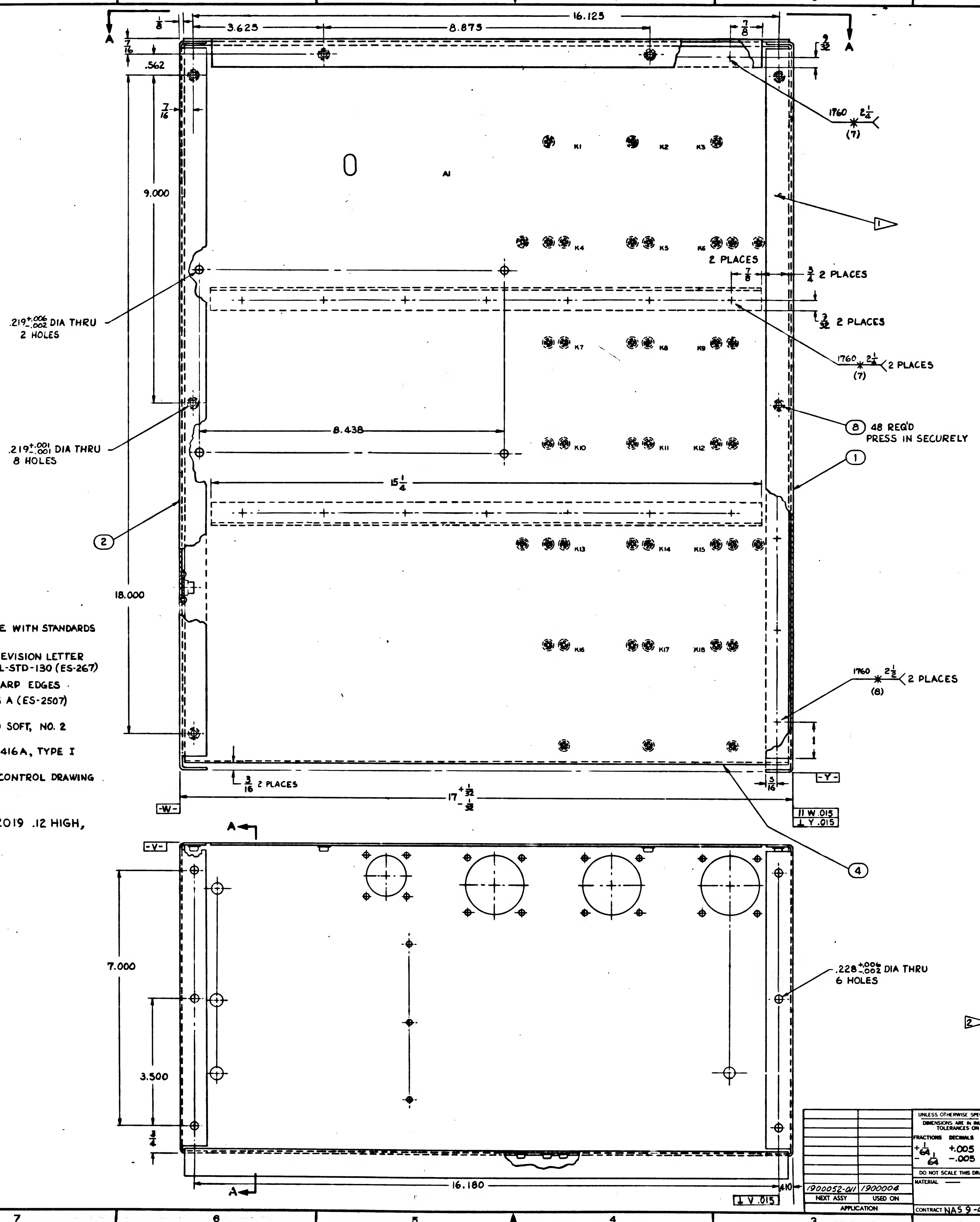
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWER, DIGITAL RECORDER
(INSEP. ASSY)

CODE IDENT NO.
SIZE E
1900095
SCALE 1/1
SHEET [illegible]

1900095

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| A | | CHANGE IN ACCORDANCE WITH MXC 187499 | | 25 JUL 63 | |
| B | | CHANGED IN ACCORDANCE WITH MXC 187930<br>ADDED REVISION STATUS BLOCK | — | 30 JUL 63 | JAL |
| C | | CHANGED IN ACCORDANCE WITH MXC 188137<br>PER TDRR 03874 | | 30 JUL 63 | JAL |



INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

1 IDENTIFY USING DRAWING NO. AND REVISION LETTER AT THE INDICATED LOCATION PER MIL-STD-130 (ES-267)

MUST BE FREE FROM BURRS AND SHARP EDGES.

SPOT WELD PER MIL-W-6858, CLASS A (ES-2507)

3 .060 THK STEEL PER QQ-S-698 CRCQ SOFT, NO. 2 LUSTER, 1009-1015

4 FINISH: CADMIUM PLATE PER QQ-P-416A, TYPE I CLASS I

2 VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING

UNLESS OTHERWISE SPECIFIED:
ALL INSIDE BEND RADII 1/16.

5 MARK CHARACTERS PER ND 1002019 .12 HIGH, COLOR BLACK

**FOR INFORMATION ONLY**

**CLASS B RELEASE TDR No.** 01571 **DATE** 5 June 63

| | | | | |
|---|---|---|---|---|
| | | | | |
| | | | | |
| C | C | B | C | A |
| B | A | B | A | A |
| A | A | A | A | A |
| SHEET 1 | SHEET 2 | SHEET 3 | SHEET 4 | SHEET 5 |
| REVISION STATUS OF SHEETS | | | | |

1900095 C

| ITEM NO | NO. REQD | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| 8 | 48 | 1015843-6 | NUT, SELF-LOCKING, SPLINE |
| 7 | 20 | AN124971 | RIVET, SOLID |
| 6 | 10 | 1015798-010 | NUT-ANCHOR SELF-LOCKING FLOATING 2 |
| 5 | 2 | 1900095-005 | STEEL ANGLE 3 4 |
| 4 | 1 | 1900095-004 | PANEL, LOWER 3 4 |
| 3 | 1 | 1900095-003 | PANEL, REAR 3 4 |
| 2 | 1 | 1900095-002 | PANEL, L.H 3 4 |
| 1 | 1 | 1900095-001 | PANEL, R.H 3 4 |

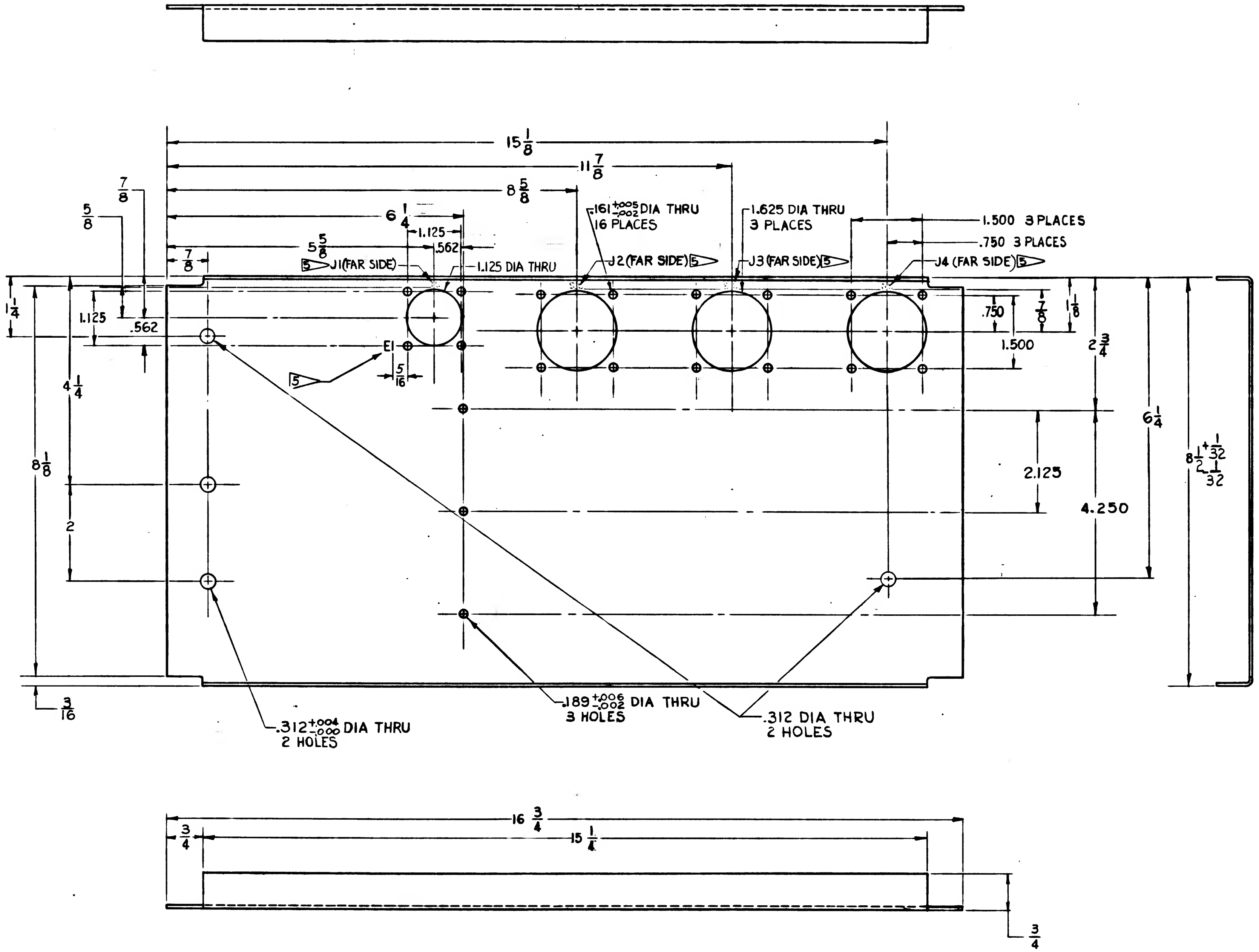
LIST OF PARTS AND MATERIALS

| | | | | |
|---|---|---|---|---|
| 1900052-011 | 1900004 | UNLESS OTHERWISE SPECIFIED<br>DIMENSIONS ARE IN INCHES<br>TOLERANCES ON<br>FRACTIONS ± 1/64 DECIMALS ±.005 ANGLES ±1°<br>DO NOT SCALE THIS DRAWING | AC SPARK PLUG DIVISION, GMC<br>MILWAUKEE, WISCONSIN<br>ACSP PN<br>DRAWN R. Fox DATE 7 MAY 63<br>CHECKED Ed Foster 16 MAY 63<br>APPROVAL A. Smith 17 MAY 63<br>APPROVAL 17 MAY 63 | MANNED SPACECRAFT CENTER<br>HOUSTON TEXAS<br>DRAWER, DIGITAL RECORDER<br>(INSEP ASSY) |
| NEXT ASSY | USED ON | MATERIAL — | NASA APPROVAL 6/5/63<br>MIT APPROVAL 6/4/63 | CODE IDENT NO<br>SIZE E<br>1900095 |
| APPLICATION | | CONTRACT NAS 9-497 | | SCALE 1/1<br>SHEET 1 OF 5 |

2 Crawston 17 MAY 63

INCHES
PHOTOGRAPHIC SCALE ONLY

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
|---|---|---|---|---|---|
| A | | CHANGE IN ACCORDANCE WITH MXC 187499 | | 25 JUN 63 | |
| C | | CHANGED IN ACCORDANCE WITH MXC 188137<br>PER TDRR | | 31 JUL 63 | JGL |



DETAIL OF ③

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01471 DATE

| | |
|---|---|
| 1900052-011 | 1900004 |
| NEXT ASSY | USED ON |
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+1/64 +.005 +1°
-1/64 -.005 -1°
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R.W. Turnand DATE 6 MAY 63
CHECKED Ed Foster 16 MAY 63
APPROVAL A. Smith 17 MAY 63
APPROVAL A. Model 17 MAY 63
NASA APPROVAL
L. Gearman 6/4/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

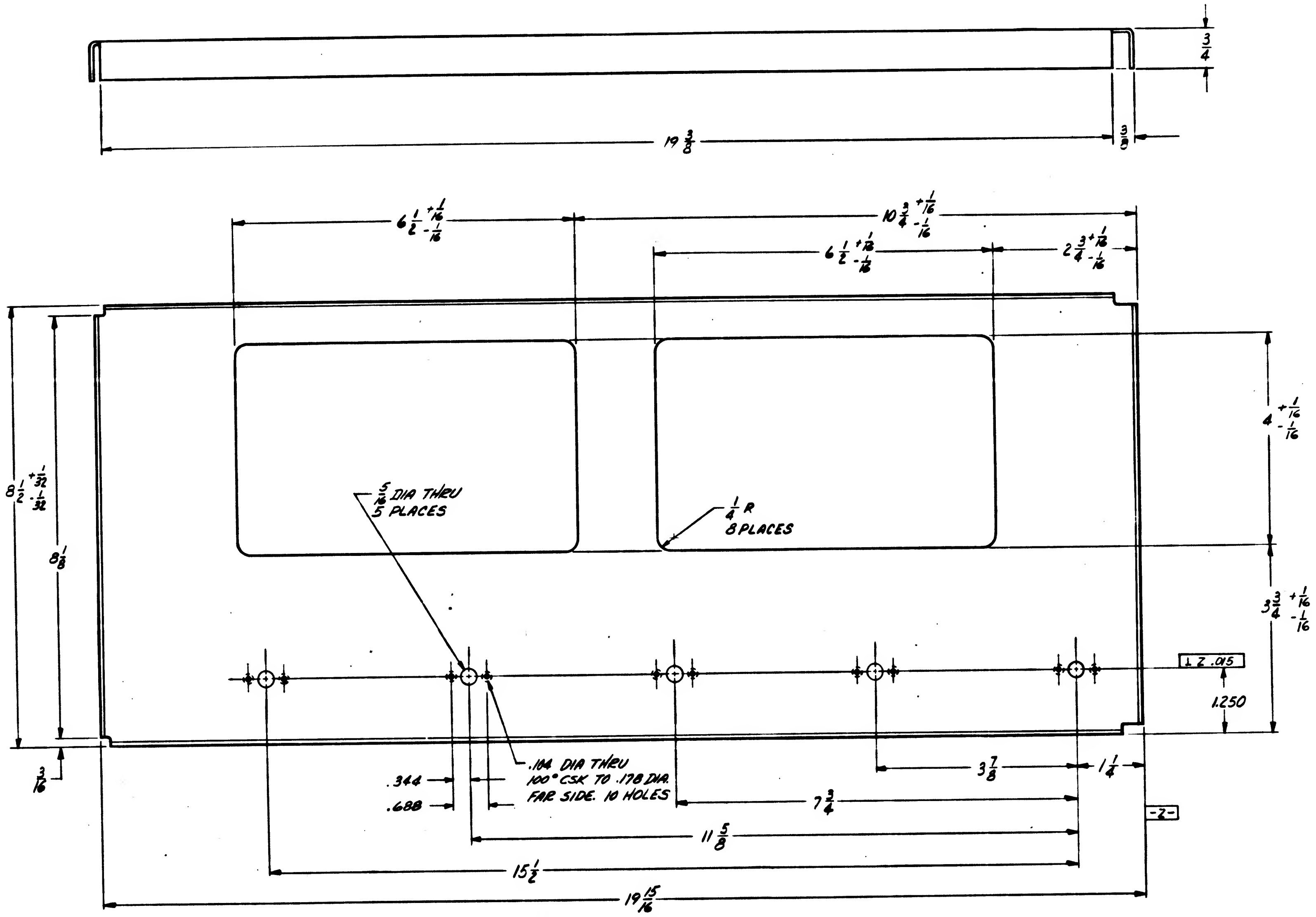
DRAWER, DIGITAL RECORDER
(INSEP ASSY)

CODE IDENT NO. SIZE E 1900095
SCALE SHEET 4 OF 5

1900095 C

INCHES
PHOTOGRAPHIC SCALE ONLY

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |



DETAIL OF ① SHOWN

DETAIL OF ② OPPOSITE

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. C1-571 DATE June 63

| | | | |
|---|---|---|---|
| 1900052-011 | 1900004 | UNLESS OTHERWISE SPECIFIED<br>DIMENSIONS ARE IN INCHES<br>TOLERANCES ON<br>FRACTIONS ± 1/64 DECIMALS ± .005 ANGLES ± 1°<br>DO NOT SCALE THIS DRAWING | AC SPARK PLUG DIVISION, GMC<br>MILWAUKEE, WISCONSIN |
| NEXT ASSY | USED ON | MATERIAL | ACSP PN |
| APPLICATION | | CONTRACT | DRAWN T. Rosmalla DATE 9 May 63<br>CHECKED Ed Foster 16 MAY 63<br>APPROVAL A. Smith 7 MAY 63<br>APPROVAL [illegible] 17 MAY 63<br>NASA APPROVAL [illegible] 4/5/63<br>L. Ickman 6/4/63<br>MIT APPROVAL [illegible] |

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWER, DIGITAL RECORDER
(INSEP. ASSY)

CODE IDENT NO | SIZE E | 1900095

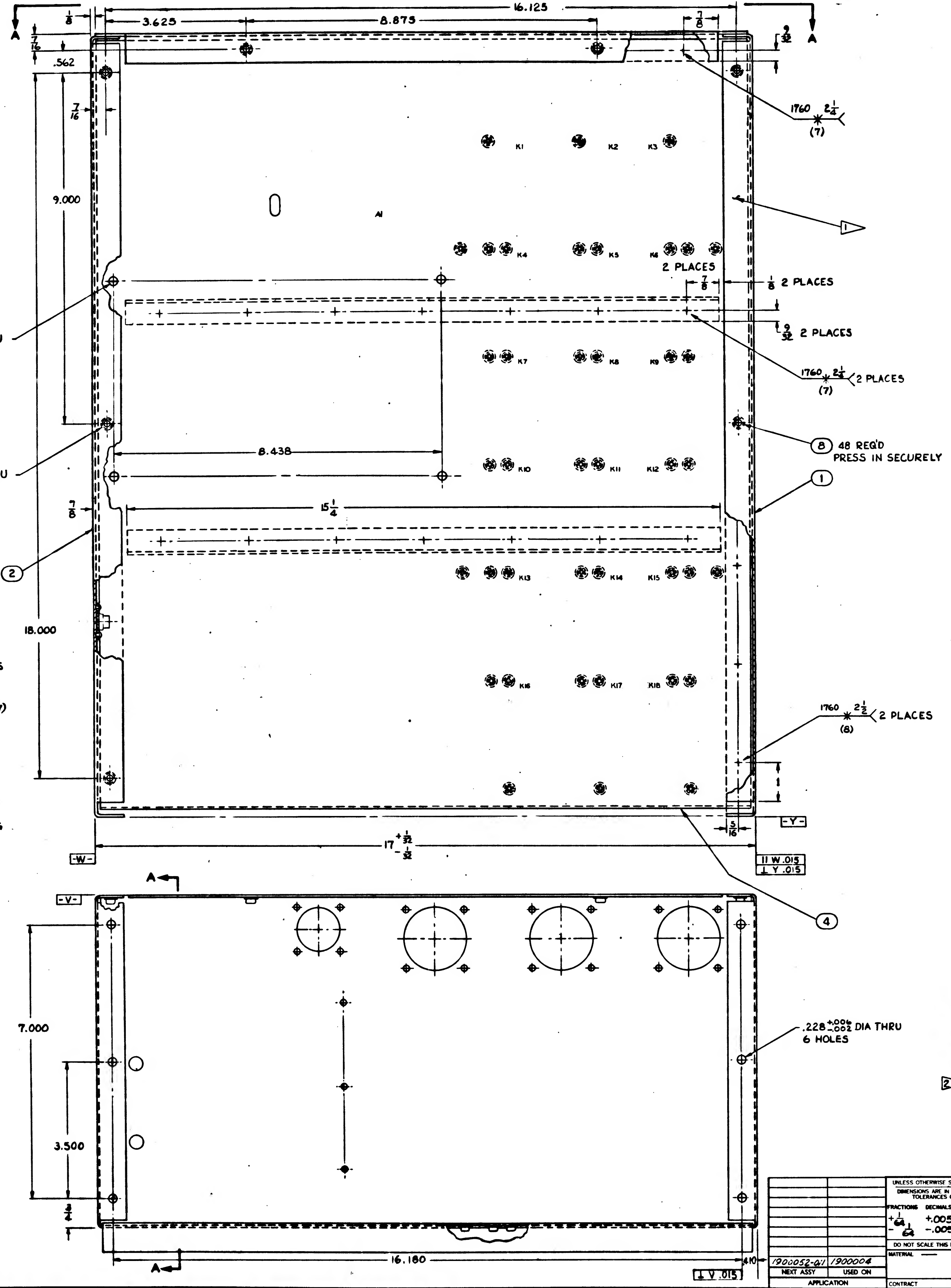
SCALE 1/1 | SHEET 5 OF 5

1900082

1900095

PHOTOGRAPHIC SCALE ONLY
INCHES

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |



**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01-71 DATE 5 June 63

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

1 IDENTIFY USING DRAWING NO. AND REVISION LETTER AT THE INDICATED LOCATION PER MIL-STD-130 (ES-267)

MUST BE FREE FROM BURRS AND SHARP EDGES.

SPOT WELD PER MIL-W-6858, CLASS A (ES-2507)

3 .060 THK STEEL PER QQ-S-698 CRCQ SOFT, NO. 2 LUSTER, 1009-1015

4 FINISH: CADMIUM PLATE PER QQ-P-416A, TYPE I CLASS I

2 VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.

UNLESS OTHERWISE SPECIFIED:
ALL INSIDE BEND RADII 1/16.

5 STENCIL CHARACTERS 1/8 HIGH PER ND CENTRALIZE AS SHOWN; COLOR, BLACK SEMI-GLOSS ENAMEL, NO 27038 CONFORMING WITH FED-STD-595 (ES-2621) PER TT-E-529 CLASS A, CLEAR FLAT LACQUER OVERCOAT PER TT-L-58 (ES-2562).

| ITEM NO. | NO. REQD | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|
| 8 | 48 | 1015843-15 | NUT, SELF-LOCKING, SPLINE |
| 7 | 20 | AN124971 | RIVET, SOLID |
| 6 | 10 | 1015798-010 | NUT-ANCHOR SELF-LOCKING, FLOATING 2 |
| 5 | 2 | 1900095-005 | STEEL ANGLE 3 4 |
| 4 | 1 | 1900095-004 | PANEL, LOWER 3 4 |
| 3 | 1 | 1900095-003 | PANEL, REAR 3 4 |
| 2 | 1 | 1900095-002 | PANEL, L.H 3 4 |
| 1 | 1 | 1900095-001 | PANEL, R.H 3 4 |

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON |
|---|---|
| 1900052-011 | 1900004 |

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

| FRACTIONS | DECIMALS | ANGLES |
|---|---|---|
| +1/64 -1/64 | +.005 -.005 | +1° -1° |

DO NOT SCALE THIS DRAWING

MATERIAL —

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN R. Fox DATE 7 MAY 63
CHECKED Ed Foutz 16 MAY 63
APPROVAL A. Smith 17 MAY 63
APPROVAL 17 MAY 63
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

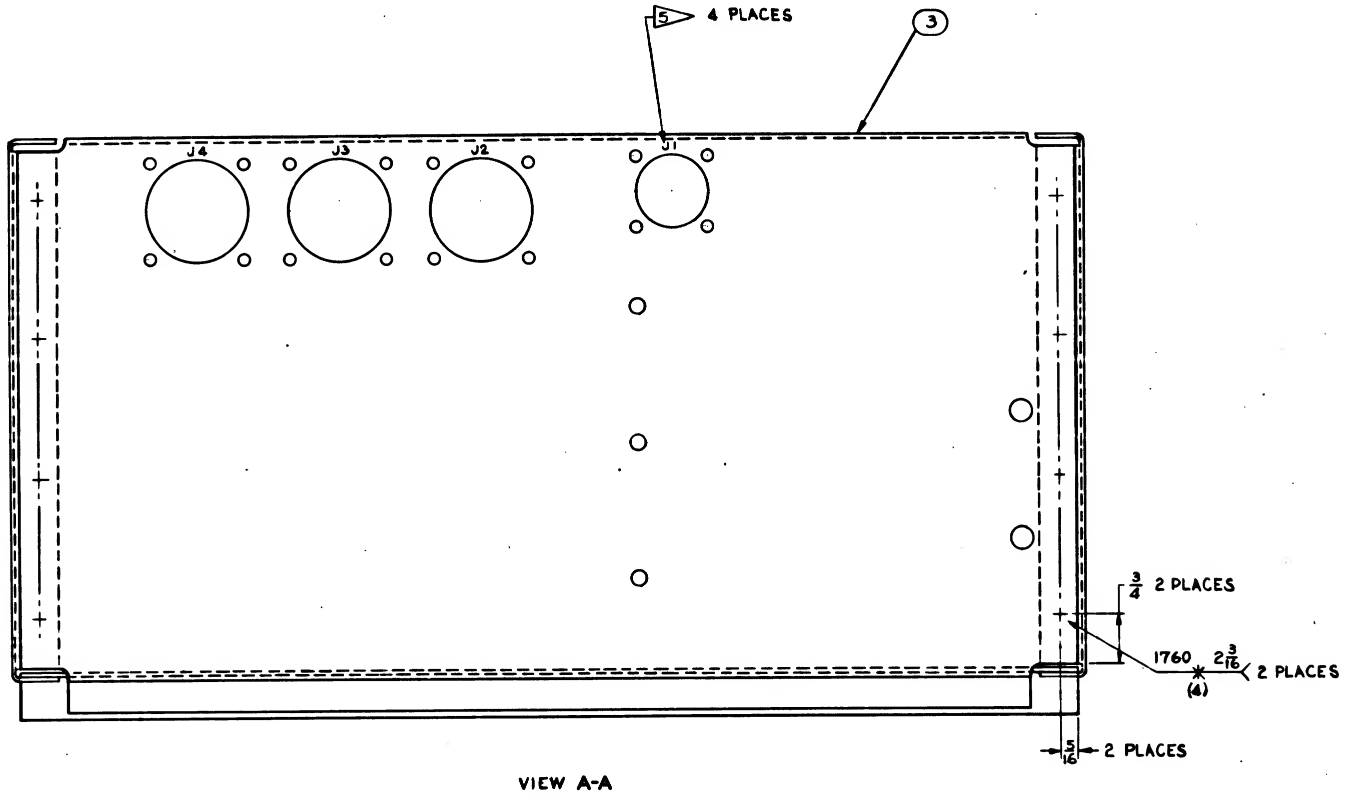
DRAWER, DIGITAL RECORDER
(INSEP ASSY)

CODE IDENT NO
SIZE E
1900095
SCALE 1/1
SHEET OF 5

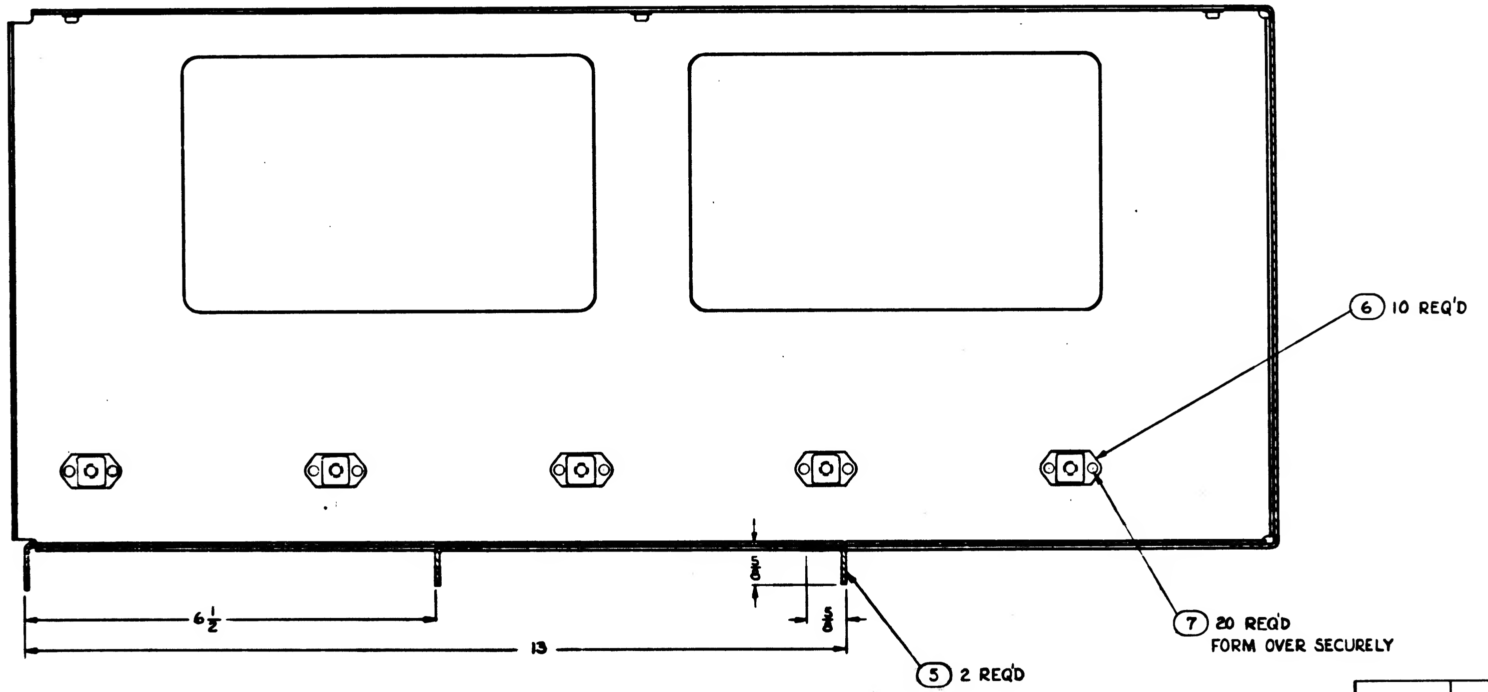
1900095

INCHES
PHOTOGRAPHIC SCALE ONLY

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |



VIEW A-A



SECTION A-A

CLASS B RELEASE TDR No.__________ DATE

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 21471 DATE 5 June 63

| NEXT ASSY | USED ON |
|---|---|
| 1900052-011 | 1900004 |
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

| FRACTIONS | DECIMALS | ANGLES |
|---|---|---|
| $+\frac{1}{64}$ | +.005 | +1° |
| $-\frac{1}{64}$ | -.005 | -1° |

DO NOT SCALE THIS DRAWING

MATERIAL —

CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE WISCONSIN

ACSP PN

DRAWN R. Fox DATE 9 MAY 63
CHECKED Ed Foster 16 MAY 63
APPROVAL A. Smith 7 MAY 63
APPROVAL 17 MAY 63
NASA APPROVAL 6-11
Geldman 6/4/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

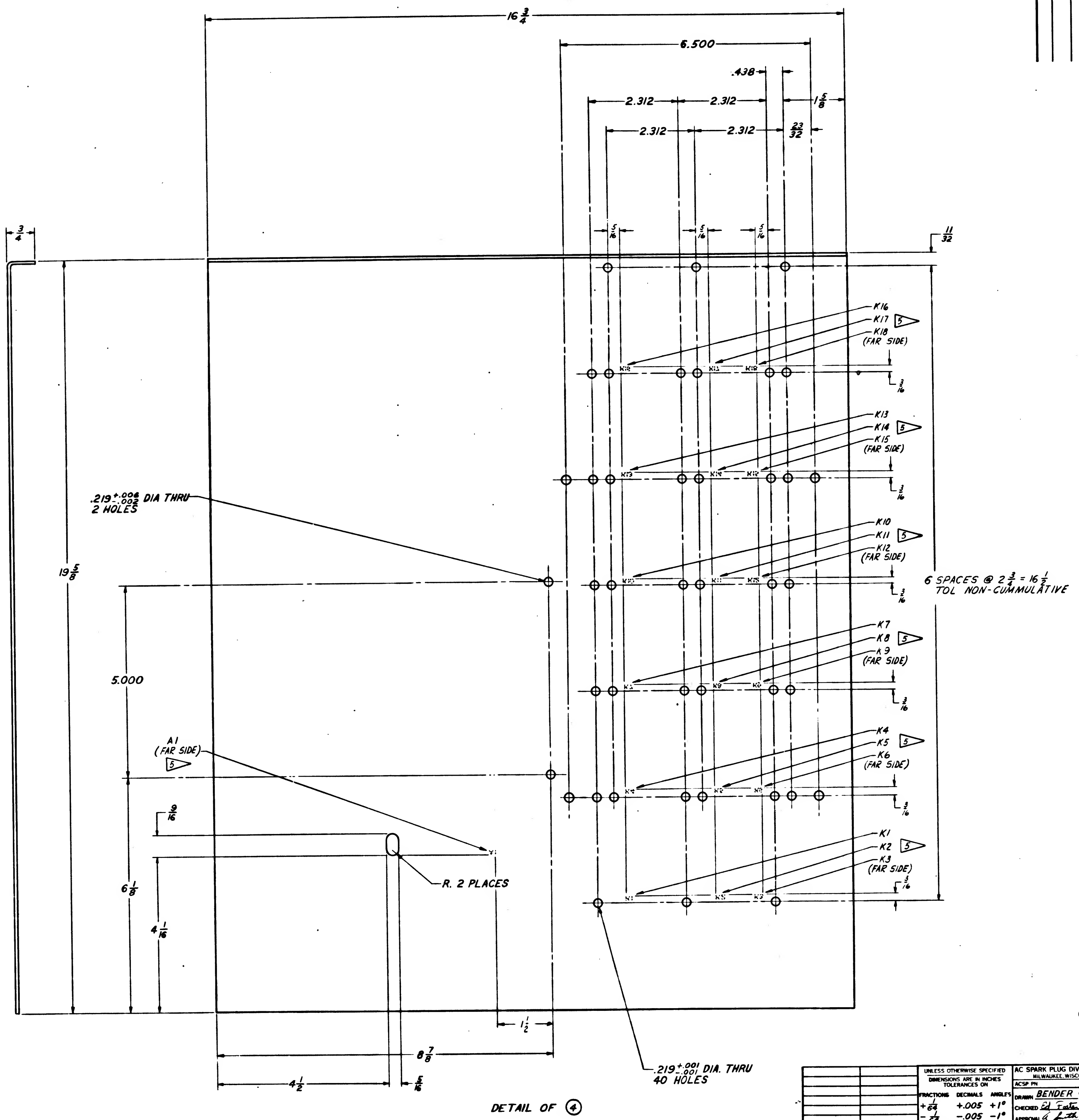
DRAWER, DIGITAL RECORDER
(INSEPARABLE ASSEMBLY)

CODE IDENT NO
SIZE E
1900095
SCALE 1/1
SHEET 2 OF 5

1900095

INCHES
PHOTOGRAPHIC SCALE ONLY

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |



DETAIL OF ④

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 6107 DATE 5 Jun 63

| | |
|---|---|
| 1900052-011 | 1900004 |
| NEXT ASSY | USED ON |
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON

| FRACTIONS | DECIMALS | ANGLES |
|---|---|---|
| + 1/64 | +.005 | +1° |
| − 1/64 | −.005 | −1° |

DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN BENDER DATE 8-MAY-63
CHECKED Ed Foster 16 MAY 63
APPROVAL A Smith 17 MAY 63
APPROVAL 17 MAY 63
NASA APPROVAL
MIT APPROVAL

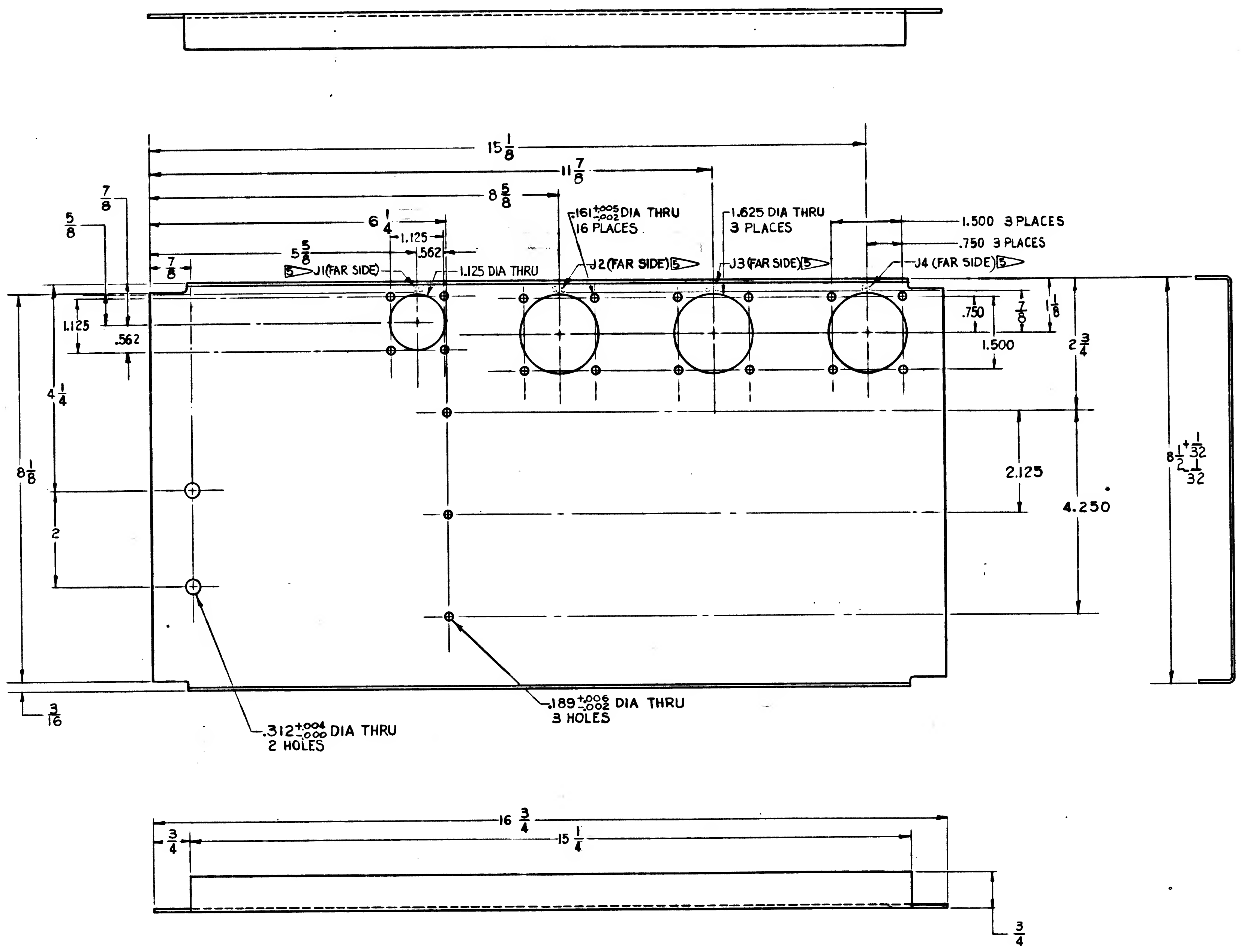
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

DRAWER, DIGITAL RECORDER
(INSEP. ASSY)

CODE IDENT NO
SIZE E
1900095
SCALE FULL
SHEET 3 OF 5

INCHES
PHOTOGRAPHIC SCALE ONLY

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| | | | | | |



DETAIL OF ③

**FOR INFORMATION ONLY**

**CLASS B RELEASE TDR No.** ______ **DATE** 5 June 63

| | | | | |
|---|---|---|---|---|
| 1900052-011 | 1900004 | UNLESS OTHERWISE SPECIFIED<br>DIMENSIONS ARE IN INCHES<br>TOLERANCES ON<br>FRACTIONS DECIMALS ANGLES<br>+1/64 +.005 +1°<br>-1/64 -.005 -1°<br>DO NOT SCALE THIS DRAWING | AC SPARK PLUG DIVISION, GMC<br>MILWAUKEE, WISCONSIN<br>ACSP PN<br>DRAWN DATE 6 MAY 63<br>CHECKED Ed Foster 16 MAY 63<br>APPROVAL A. Smith 17 MAY 63<br>APPROVAL 17 MAY 63 | MANNED<br>SPACECRAFT CENTER<br>HOUSTON, TEXAS<br>DRAWER, DIGITAL RECORDER<br>(INSEP ASSY) |
| NEXT ASSY | USED ON | MATERIAL | NASA APPROVAL<br>MIT APPROVAL | CODE IDENT NO SIZE E 1900095 |
| APPLICATION | | CONTRACT | | SCALE SHEET 4 OF 5 |

1900095

INCHES
PHOTOGRAPHIC SCALE ONLY

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
|---|---|---|---|---|---|
| A | | CHANGE IN ACCORDANCE WITH MXC 188123 | MXC 188123 | 25 JUL 63 | C.A.M. / V.M. |
| B | | CHANGED IN ACCORDANCE WITH MXC 188474 | | 21 AUG 63 | EL |
| C | | CHANGED IN ACCORDANCE WITH MXC-189125 | | 4 SEP 63 | J.E.L. / PN |
| D | | CHANGED INACCORDANCE WITH MXC 189445 | | 13 SEP 63 | WSM / PN |
| E | | REPLACED BY REV F PER MXC-191010<br>REVISED PER TDR 04419 | | 15 OCT 63 | MEM<br>WK |

PICTURE INCOMPLETE

**FOR INFORMATION ONLY**

**CLASS B RELEASE TDR No.** 01801 **DATE** 2 July 63

ⓔ **REPLACED WITH CHANGE BY REV** F

| ITEM NO. | NO. REQD | PART OR IDENTIFING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|
| | | | |
| | | | |
| | 190 | 1015818-420 | CONNECTOR, SOCKET CONTACTS |
| | 1 | 1015904-46 | TERMINAL LUG |
| | 30 | 1016006-002 | SPLICE REDUCER PERMANENT, CRIMP STYLE, COPPER |
| | 2 | 1016006-001 | SPLICE REDUCER PERMANENT, CRIMP STYLE, COPPER |
| | 30 | 1010490-258 | ↑ |
| | 102 | 1010490-200 | ↑ |
| | 164 | 1010490-198 | ↑ |
| | 64 | 1010490-196 | INSULATION, SLEEVING ELEC (HEAT SHRINK) |
| | 64 | 1000242-008 | ↑ ↑ ↑ ,OUTER |
| | 100 | 1000242-004 | ↑ ↑ ↑ ,OUTER |
| | 64 | 1000243-008 | ↑ ↑ ↑ ,INNER |
| | 100 | 1000243-003 | FERRULE, ELEC CONDUCTOR, INNER |
| | 1 | 1900096-4 | WIRE ND1002181 TYPE II, CLASS 4, 24 AWG, W/R & W/B |
| | 1 | 1900096-3 | WIRE ND1002181 TYPE I, CLASS 4, 24 AWG, WHT |
| | 1 | 1900096-2 | WIRE ND1002181 TYPE I, CLASS 1, 24 AWG, WHT |

LIST OF PARTS AND MATERIALS

| ITEM NO. | NO. REQD | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|
| | 70 | 1015908-51 | ↑ HYRING |
| | 70 | 1015908-41 | ↑ ,OUTER, MALE BODY |
| | 70 | 1015908-21 | COAXIAL, SOCKET CONTACT |
| | 1 | 1015906-104 | ↑ ↑ ↑ |
| | 1 | 1015906-103 | ↑ ↑ ↑ |
| | 1 | 1015906-102 | ↑ ↑ ↑ |
| | 2 | 1015906-101 | ↑ ↑ ↑ |
| | 2 | 1015906-100 | ↑ RECEP, ELEC |
| | 7 | 1015818-660 | ↑ ,PLUG, ELEC |
| | 2 | 1015867-660 | ↑ ,RECEP, ELEC |
| | 300 | 1015818-424 | ↑ ,SOCKET CONTACTS |
| | 1 | MS3127E-24-61PX | ↑ ↑ ↑ |
| | 1 | MS3127E-24-61PW | ↑ ↑ ↑ |
| | 1 | MS3127E-24-61P | CONNECTOR, RECEP, ELEC |
| | 1 | 1900096-1 | WIRE-ND1002181 TYPE I, CLASS 1, 22 AWG WHT |

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON |
|---|---|
| 1900057-011 | 1900057-011 |

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN RW Heisel DATE 17 JUN 63
CHECKED W. Diehl 17 Jun 63
APPROVAL W F AmBrey 17 Jun 63
APPROVAL J Gilmore 2 July 63
NASA APPROVAL 7/2/63
MIT APPROVAL 2 July 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS "A"

CODE IDENT NO.
SIZE C
1900096
SCALE —
SHEET —

E 1900096 E

MIL 1077C—P

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

## REVISION STATUS OF SHEETS

| SH | REV | SH | REV | SH | REV | SH | REV | SH | REV | SH | REV | SH | REV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

REVISION F

NASA DRAWING NO. 1900096
SHEET 2 OF 47

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| APPLICATION | |
|---|---|
| NEXT ASSY | USED ON |
| 1900057-011 | 1900057-011 |

| REVISIONS | | | |
|---|---|---|---|
| SYM | DESCRIPTION | DATE | APPROVAL |
| F | REPLACES REV. E WITH CHANGE PER MKC-19130 | 13 OCT 63 | SD |
| | REVISED PER TDR 04419 | 5 NOV 63 | WK |

**FOR INFORMATION ONLY**
7 July 63
DATE

**CLASS B RELEASE TDR No.** 01801

(F) **REPLACES REV E WITH CHANGE**

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| REV | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F |
| SHEET | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 |
| REV STATUS REV | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | |
| OF SHEETS SHEET | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | |

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

ACSP PN
DRAWN R.W. HEISEL 17 JUN 63
CHECKED W. DIEHL DATE 17 JUN 63
APPROVAL 17 OCT 63
APPROVAL Nov 4 63
NASA APPROVAL
MIT APPROVAL 5 Nov 63
CONTRACT NAS9-497

WIRING HARNESS "A"

CODE IDENT NO.
SIZE A
1900096
REV F
SCALE —
SHEET 1 OF 47

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PENNANT NOTE

GENERAL NOTES

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MARK CONDUCTOR IDENTIFICATION PER ND . (ES-2469)

MARK CONDUCTOR IDENTIFICATION OMITTING ALL SUFFIX LETTERS EXCEPT A AND B PER ND .

Y OR N IN TINNED COLUMN INDICATES YES OR NO.

A LETTER WITH AN ASTERISK SUFFIX, INDICATES A LOWER CASE LETTER.

3 VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.

THE SUFFIX LETTER OF A CONDUCTOR IDENTIFICATION NUMBER INDICATES CONDUCTOR SHIELDING OR CONDUCTOR COLOR.
A - FROM END SHIELD
B - TO END SHIELD
E - GRAY
L - WHITE WITH BLUE TRACER
R - WHITE WITH RED TRACER
X - COAX OUTER CONDUCTOR

BIND WIRES TOGETHER USING ND . FORM S OR Y LOCKSTITCH AT 1/2 INCH SPACING.

SPACING OF CONDUCTOR IDENTIFICATION SHALL BE EVERY 1.2 INCHES.

SPIRALLING OF THE MARKINGS IS ALLOWED.

IDENTIFY USING PART NO. AND REVISION LETTER PER MIL-STD-130 (ES-267).

| MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096 | |
|---|---|---|---|
| SCALE-NONE | REV LTR F | SHEET 3 OF 47 | |

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PENNANT NOTE

GENERAL NOTES

MARK SLEEVING ITEM NUMBERS FOLLOWING AN A OR T IN THE ACCESSORIES ITEM NUMBER FIELD WITH CONDUCTOR NUMBER PER CONDUCTOR CHART PER ND . (ES-2872, CLASS 1) COLOR BLACK, 1/8 HIGH

MARK SLEEVE ON ALL E POINTS WITH E POINT NUMBER PER CONDUCTOR CHART PER ND (ES-2872, CLASS 1) COLOR BLACK, 1/8 INCH HIGH.

SOLDER PER MIL-S-6872 USING ITEMS 31 AND 32

| MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096 | |
|---|---|---|---|
| SCALE-NONE | REV LTR F | SHEET 4 OF 47 | |

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

PENNANT LIST OF MATERIALS

| NOTE | ITEM | QTY | PART NO | DESCRIPTION |
|---|---|---|---|---|
| | 18 | 242 | 1015818-420 | CONNECTOR SOCKET CONTACTS |
| | 19 | 6 | 1010490-258 | INSULATION SLEEVING, ELECTRICAL (HEAT SHRINK) |
| | 20 | 2 | 1015902- 46 | TERMINAL LUG |
| | 21 | 1 | MS3127E-24-61P | CONNECTOR, RECEP ELEC |
| | 22 | 1 | MS3127E-24-61PW | CONNECTOR, RECEP ELEC |
| | 23 | 1 | MS3127E-24-61PX | CONNECTOR, RECEP ELEC |
| | 24 | 6 | 1015818-660 | CONNECTOR, PLUG ELEC |
| | 25 | 2 | 1015867-660 | CONNECTOR, RECEP ELEC |
| | 26 | 2 | 1015906-100 | CONNECTOR, RECEP ELEC |
| | 27 | 2 | 1015906-101 | CONNECTOR, RECEP ELEC |
| | 28 | 1 | 1015906-102 | CONNECTOR, RECEP ELEC |
| | 29 | 1 | 1900096-005 | WIRE-COAX MIL-C-17/69A RG188A/U 173 FT TOTAL LG |
| | 30 | 58 | 1010490-202 | INSULATION SLEEVING, ELECTRICAL (HEAT SHRINK) |
| | 31 | AR | QQ-S-571 | SOLDER SN60 (ES-2175 ALLOY 1) |
| | 32 | AR | QQ-S-571 | FLUX TYPE AR (ES-2175 TYPE 1 OR 2) OR<br>MIL-F-14256 FLUX (ES-2798) |
| | 33 | 1 | 1015906-103 | CONNECTOR, RECEP. ELEC. |
| | 34 | 1 | 1015906-104 | CONNECTOR, RECEP. ELEC. |

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1900096
SCALE-NONE REV LTR F SHEET 6 OF 47

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| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | FROM CIRCUIT POINT | STRIP WIRE OR JACKET 2 | TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CIRCUIT POINT | STRIP WIRE OR JACKET 2 | TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 1 | 4 | | J1-A | 19 | N | | | E1 | 25 | | 20 | |
| A 2 | 3 | | J1-B | 19 | N | | | P6-56 | 19 | N | 17 | |
| A 3 | 3 | | J1-C | 19 | N | | | P6-54 | 19 | N | 17 | |
| A 4 | 3 | | J1-D | 19 | N | | | P6-55 | 19 | N | 17 | |
| A 5 | 3 | | J1-E | 19 | N | | | S6A- 1A | 25 | Y | | |
| A 6 | 3 | | J1-F | 19 | N | | | P7- 1 | 19 | N | 18 | |
| A 7 | 3 | | J1-G | 19 | N | | | P7- 2 | 19 | N | 18 | |
| A 8 | 3 | | J1-H | 19 | N | | | P7- 3 | 19 | N | 18 | |
| A 9 | 3 | | J1-J | 19 | N | | | P7- 4 | 19 | N | 18 | |
| A 10 | 3 | | J1-K | 19 | N | | | P7- 5 | 19 | N | 18 | |
| A 11 | 3 | | J1-L | 19 | N | | | P7- 6 | 19 | N | 18 | |
| A 12 | 3 | | J1-M | 19 | N | | | P7- 7 | 19 | N | 18 | |
| A 13 | 3 | | J1-N | 19 | N | | | P7- 8 | 19 | N | 18 | |
| A 14 | 3 | | J1-P | 19 | N | | | P7- 9 | 19 | N | 18 | |
| A 15 | 3 | | J1-R | 19 | N | | | P7-11 | 19 | N | 17 | |
| A 16 | 3 | | J1-S | 19 | N | | | P7-12 | 19 | N | 17 | |
| A 17 | 3 | | J1-T | 19 | N | | | P7-13 | 19 | N | 17 | |
| A 18 | 3 | | J1-U | 19 | N | | | P7-14 | 19 | N | 17 | |

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1900096
SCALE-NONE REV LTR F SHEET 7 OF 47

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PENNANT LIST OF MATERIALS

| NOTE | ITEM | QTY | PART NO | DESCRIPTION |
|---|---|---|---|---|
| | 1 | 1 | 1900096-004 | WIRE ND1002181 CLASS 4 TYPE 2 24AWG<br>(WHT/RED, WHT/BLU) 73 FT TOTAL LENGTH |
| | 2 | 1 | 1900096-003 | WIRE ND1002181 CLASS 4 TYPE 1 24AWG (WHITE)<br>3 FT TOTAL LENGTH |
| | 3 | 1 | 1900096-002 | WIRE ND1002181 CLASS 1 TYPE 1 24AWG (WHITE)<br>668 FT TOTAL LENGTH |
| | 4 | 1 | 1900096-001 | WIRE ND1002181 CLASS 1 TYPE 1 22AWG (WHITE)<br>228 FT TOTAL LENGTH |
| | 5 | 59 | 1000243-003 | FERRULE, ELECTRICAL CONDUCTOR INNER |
| | 6 | 59 | 1000242-004 | FERRULE, ELECTRICAL CONDUCTOR OUTER |
| | 7 | 24 | 1000243-008 | FERRULE, ELECTRICAL CONDUCTOR INNER |
| | 8 | 24 | 1000242-008 | FERRULE, ELECTRICAL CONDUCTOR OUTER |
| | 9 | 24 | 1010490-196 | INSULATION SLEEVING, ELECTRICAL (HEAT SHRINK) |
| | 10 | 69 | 1010490-198 | INSULATION SLEEVING, ELECTRICAL (HEAT SHRINK) |
| | 11 | 1 | 1010490-200 | INSULATION SLEEVING, ELECTRICAL (HEAT SHRINK) |
| | 13 | 6 | 1016006-002 | SPLICE REDUCER, PERMANENT, CRIMP STYLE, COPPER |
| | 14 | 58 | 1015908- 21 | COAXIAL, SOCKET CONTACT |
| | 15 | 58 | 1015908- 41 | COAXIAL, OUTER MALE BODY |
| | 16 | 58 | 1015908- 51 | COAXIAL, HYRING |
| | 17 | 223 | 1015818-424 | CONNECTOR SOCKET CONTACTS |

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1900096
SCALE-NONE REV LTR F SHEET 5 OF 47

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| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | FROM CIRCUIT POINT | STRIP WIRE OR JACKET 2 | TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CIRCUIT POINT | STRIP WIRE OR JACKET 2 | TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 19 | 3 | | J1-V | 19 | N | | | P7-15 | 19 | N | 17 | |
| A 20 | 3 | | J1-W | 19 | N | | | P7-16 | 19 | N | 17 | |
| A 21 | 3 | | J1-X | 19 | N | | | P7-17 | 19 | N | 17 | |
| A 22 | 3 | | J1-Y | 19 | N | | | P7-18 | 19 | N | 17 | |
| A 23 | 3 | | J1-Z | 19 | N | | | P7-19 | 19 | N | 17 | |
| A 24 | 3 | | J1-A* | 19 | N | | | P7-20 | 19 | N | 17 | |
| A 25 | 3 | | J1-B* | 19 | N | | | P7-21 | 19 | N | 17 | |
| A 26 | 3 | | J1-C* | 19 | N | | | P7-22 | 19 | N | 17 | |
| A 27 | 3 | | J1-D* | 19 | N | | | P7-23 | 19 | N | 17 | |
| A 28 | 3 | | J1-E* | 19 | N | | | P7-24 | 19 | N | 17 | |
| A 29 | 3 | | J1-F* | 19 | N | | | P7-25 | 19 | N | 17 | |
| A 30 | 3 | | J1-G* | 19 | N | | | P7-26 | 19 | N | 17 | |
| A 31 | 3 | | J1-H* | 19 | N | | | P7-27 | 19 | N | 17 | |
| A 32 | 3 | | J1-I* | 19 | N | | | P7-28 | 19 | N | 17 | |
| A 33 | 3 | | J1-J* | 19 | N | | | P7-29 | 19 | N | 18 | |
| A 34 | 3 | | J1-K* | 19 | N | | | P7-30 | 19 | N | 18 | |
| A 35 | 3 | | J1-M* | 19 | N | | | P7-31 | 19 | N | 18 | |
| A 36 | 3 | | J1-N* | 19 | N | | | P7-32 | 19 | N | 18 | |

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1900096
SCALE-NONE REV LTR F SHEET 8 OF 47

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

GBS WIRING HARNESS A F 1900096

| NUMBER | ITEM NO. | 2 | FROM CIRCUIT POINT | 2 | T I N | FROM TERMINATION SPEC. 1 ITEM NO. | NO. | TO CIRCUIT POINT | 2 | T I N | TO TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 51 | 3 | | J2-B | 19 | N | | | P2-61 | 19 | N | 18 | |
| A 52 | 3 | | J2-C | 19 | N | | | P2-62 | 19 | N | 18 | |
| A 53 | 3 | | J2-D | 19 | N | | | P2-52 | 19 | N | 18 | |
| A 54 | 3 | | J2-E | 19 | N | | | P2-53 | 19 | N | 18 | |
| A 55 | 3 | | J2-F | 19 | N | | | P2-54 | 19 | N | 18 | |
| A 56 | 3 | | J2-G | 19 | N | | | P2-55 | 19 | N | 18 | |
| A 57 | 3 | | J2-H | 19 | N | | | P2-56 | 19 | N | 18 | |
| A 58 | 3 | | J2-J | 19 | N | | | P2-57 | 19 | N | 18 | |
| A 59 | 3 | | J2-K | 19 | N | | | P2-58 | 19 | N | 18 | |
| A 60 | 3 | | J2-L | 19 | N | | | P2-59 | 19 | N | 18 | |
| A 61 | 3 | | J2-M | 19 | N | | | P2-60 | 19 | N | 18 | |
| A 62 | 3 | | J2-N | 19 | N | | | J12-15 | 19 | N | 17 | |
| A 63 | 3 | | J2-P | 19 | N | | | J12-10 | 19 | N | 18 | |
| A 64 | 3 | | J2-R | 19 | N | | | P2-63 | 19 | N | 18 | |
| A 65 | 3 | | J2-S | 19 | N | | | XF1- 1 | 25 | Y | | |
| A 66 | 3 | | J2-T | 19 | N | | | P6-57 | 19 | N | 17 | |
| A 67 | 3 | | J2-U | 19 | N | | | J12-29 | 19 | N | 18 | |
| A 68 | 3 | | J2-V | 19 | N | | | J12-28 | 19 | N | 18 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE-NONE | REV LTR F | SHEET 10 OF 47

MIL 2085 - 4-63 WIR

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GBS WIRING HARNESS A F 1900096

| NUMBER | ITEM NO. | 2 | FROM CIRCUIT POINT | 2 | T I N | FROM TERMINATION SPEC. 1 ITEM NO. | NO. | TO CIRCUIT POINT | 2 | T I N | TO TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 69 | 3 | | J2-W | 19 | N | | | J12-27 | 19 | N | 18 | |
| A 70 | 3 | | J2-X | 19 | N | | | J12-26 | 19 | N | 18 | |
| A 71 | 3 | | J2-Y | 19 | N | | | J12-16 | 19 | N | 18 | |
| A 72 | 3 | | J2-Z | 19 | N | | | J12-17 | 19 | N | 18 | |
| A 73 | 3 | | J2-A* | 19 | N | | | J12-18 | 19 | N | 18 | |
| A 74 | 3 | | J2-B* | 19 | N | | | J12-19 | 19 | N | 18 | |
| A 75 | 3 | | J2-C* | 19 | N | | | J12-20 | 19 | N | 18 | |
| A 76 | 3 | | J2-D* | 19 | N | | | J12-21 | 19 | N | 18 | |
| A 77 | 3 | | J2-E* | 19 | N | | | J12-22 | 19 | N | 18 | |
| A 78 | 3 | | J2-F* | 19 | N | | | J12-23 | 19 | N | 18 | |
| A 79 | 3 | | J2-G* | 19 | N | | | J12-24 | 19 | N | 18 | |
| A 80 | 3 | | J2-H* | 19 | N | | | J12-30 | 19 | N | 18 | |
| A 81 | 3 | | J2-I* | 19 | N | | | J12-25 | 19 | N | 17 | |
| A 82 | 3 | | J2-M* | 19 | N | | | P6-32 | 19 | N | 17 | |
| A 83 | 3 | | J2-N* | 19 | N | | | P6-33 | 19 | N | 17 | |
| A 84 | 3 | | J2-P* | 19 | N | | | P6-34 | 19 | N | 17 | |
| A 85 | 3 | | J2-Q* | 19 | N | | | P6-35 | 19 | N | 17 | |
| A 86 | 3 | | J2-R* | 19 | N | | | P6-36 | 19 | N | 17 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE-NONE | REV LTR F | SHEET 11 OF 47

MIL 2085 - 4-63 WIR

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GBS WIRING HARNESS A F 1900096

| NUMBER | ITEM NO. | 2 | FROM CIRCUIT POINT | 2 | T I N | FROM TERMINATION SPEC. 1 ITEM NO. | NO. | TO CIRCUIT POINT | 2 | T I N | TO TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 37 | 3 | | J1-P* | 19 | N | | | P7-33 | 19 | N | 18 | |
| A 38 | 3 | | J1-Q* | 19 | N | | | P7-34 | 19 | N | 18 | |
| A 39 | 3 | | J1-R* | 19 | N | | | P7-35 | 19 | N | 18 | |
| A 40 | 3 | | J1-S* | 19 | N | | | P7-36 | 19 | N | 18 | |
| A 41 | 3 | | J1-T* | 19 | N | | | P7-37 | 19 | N | 18 | |
| A 42 | 3 | | J1-U* | 19 | N | | | S7A- 1A | 25 | Y | | |
| A 43 | 3 | | J1-V* | 19 | N | | | P6-52 | 19 | N | 17 | |
| A 44 | 3 | | J1-W* | 19 | N | | | S11A- 1A | 25 | Y | | |
| A 45 | 3 | | J1-X* | 19 | N | | | S11A- 3A | 25 | Y | | |
| A 46 | 3 | | J1-Y* | 19 | N | | | S11A- 5A | 25 | Y | | |
| A 47 | 3 | | J1-BB | 19 | N | | | P6-48 | 19 | N | 17 | |
| A 48 | 3 | | J1-AA | 19 | N | | | P6-49 | 19 | N | 17 | |
| A 49 | 3 | | J1-Z* | 19 | N | | | P6-50 | 19 | N | 17 | |
| A 50 | 1 | | | | | A 9 | | | | | A 10 | |
| | | | | | | 7 8 | | | | | | |
| A 50A | 4 | | SHLD A50 | 25 | N | | | E27 | 25 | N | | |
| A 50L | | | J1-CC | 19 | N | | | P6-16 | 19 | N | 17 | |
| A 50R | | | J1-DD | 19 | N | | | P6-21 | 19 | N | 17 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE-NONE | REV LTR F | SHEET 9 OF 47

MIL 2085 - 4-63 WIR

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GBS WIRING HARNESS A F 1900096

| NUMBER | ITEM NO. | 2 | FROM CIRCUIT POINT | 2 | T I N | FROM TERMINATION SPEC. 1 ITEM NO. | NO. | TO CIRCUIT POINT | 2 | T I N | TO TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 87 | 3 | | J2-S* | 19 | N | | | P6-37 | 19 | N | 17 | |
| A 88 | 3 | | J2-T* | 19 | N | | | P6-38 | 19 | N | 17 | |
| A 89 | 3 | | J2-U* | 19 | N | | | P6-39 | 19 | N | 17 | |
| A 90 | 3 | | J2-V* | 19 | N | | | P6-40 | 19 | N | 17 | |
| A 91 | 3 | | J2-W* | 19 | N | | | P6-41 | 19 | N | 17 | |
| A 92 | 3 | | J2-X* | 19 | N | | | P6-42 | 19 | N | 17 | |
| A 93 | 3 | | J2-Y* | 19 | N | | | P6-43 | 19 | N | 17 | |
| A 94 | 3 | | J2-Z* | 19 | N | | | P6-44 | 19 | N | 17 | |
| A 95 | 3 | | J2-AA | 19 | N | | | P6-45 | 19 | N | 17 | |
| A 96 | 3 | | J2-BB | 19 | N | | | P6-29 | 19 | N | 17 | |
| A 97 | 3 | | J2-CC | 19 | N | | | P6-28 | 19 | N | 17 | |
| A 98 | 3 | | J2-EE | 19 | N | | | P6-31 | 19 | N | 17 | |
| A 99 | 3 | | J2-FF | 19 | N | | | P6-30 | 19 | N | 17 | |
| A 100 | 3 | | J2-GG | 19 | N | | | S13SW2-NO | 25 | Y | | |
| A 101 | 3 | | J2-GG | 19 | N | | | J2-HH | 19 | N | | |
| A 102 | 4 | | J3-A | 19 | N | | | E2 | 25 | N | 13 19 | |
| A 103 | 1 | | | | | A 9 | | | | | A 10 | |
| | | | | | | 7 8 | | | | | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE-NONE | REV LTR F | SHEET 12 OF 47

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INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

GBS WIRING HARNESS A F 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. ITEM NO. | TO CIRCUIT POINT | 2 | T I N | TERMINATION SPEC ITEM NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 107 | 1 | | | | A 9 | | | | A 10 |
| | | | | | 7 8 | | | | |
| A 107A | 4 | SHLD A107 | 25 | N | | E3 | 25 | N | |
| A 107L | | J3-F* | 19 | N | | S3A- 3B | 25 | Y | |
| A 107R | | J3-F | 19 | N | | S3A- 3A | 25 | Y | |
| A 108 | 1 | | | | A 9 | | | | A 10 |
| | | | | | 7 8 | | | | |
| A 108A | 4 | SHLD A108 | 25 | N | | E3 | 25 | N | |
| A 108L | | J3-G* | 19 | N | | S3A- 2B | 25 | Y | |
| A 108R | | J3-G | 19 | N | | S3A- 2A | 25 | Y | |
| A 109 | 1 | | | | A 9 | | | | A 10 |
| | | | | | 7 8 | | | | |
| A 109A | 4 | SHLD A109 | 25 | N | | E4 | 25 | N | 13 19 |
| A 109L | | J3-H* | 19 | N | | P6-14 | 19 | N | 17 |
| A 109R | | J3-H | 19 | N | | P6-13 | 19 | N | 17 |
| A 110 | 1 | | | | A 9 | | | | A 10 |
| | | | | | 7 8 | | | | |
| A 110A | 4 | SHLD A110 | 25 | N | | E4 | 25 | N | |

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096 | SCALE-NONE | REV LTR F | SHEET 14 OF 47

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GBS WIRING HARNESS A F 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. ITEM NO. | TO CIRCUIT POINT | 2 | T I N | TERMINATION SPEC ITEM NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 110L | | J3-J* | 19 | N | | S1A- 6B | 25 | Y | |
| A 110R | | J3-J | 19 | N | | S1A- 6A | 25 | Y | |
| A 111 | 1 | | | | A 9 | | | | A 10 |
| | | | | | 7 8 | | | | |
| A 111A | 4 | SHLD A111 | 25 | N | | E4 | 25 | N | |
| A 111L | | J3-K* | 19 | N | | S2B- 5B | 25 | Y | |
| A 111R | | J3-K | 19 | N | | S2B- 5A | 25 | Y | |
| A 112 | 1 | | | | A 9 | | | | A 10 |
| | | | | | 7 8 | | | | |
| A 112A | 4 | SHLD A112 | 25 | N | | E4 | 25 | N | |
| A 112L | | J3-M* | 19 | N | | S8A- 6B | 25 | Y | |
| A 112R | | J3-M | 19 | N | | S8A- 5A | 25 | Y | |
| A 113 | 1 | | | | A 9 | | | | A 10 |
| | | | | | 7 8 | | | | |
| A 113A | 4 | SHLD A113 | 25 | N | | E4 | 25 | N | |
| A 113L | | J3-N* | 19 | N | | S1A- 1B | 25 | Y | |
| A 113R | | J3-N | 19 | N | | S1A- 1A | 25 | Y | |
| A 114 | 1 | | | | A 9 | | | | A 10 |

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096 | SCALE-NONE | REV LTR F | SHEET 15 OF 47

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GBS WIRING HARNESS A F 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. ITEM NO. | TO CIRCUIT POINT | 2 | T I N | TERMINATION SPEC ITEM NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 103A | 4 | SHLD A103 | 25 | N | | E3 | 25 | N | 13 19 |
| A 103L | | J3-B* | 19 | N | | S3A- 7B | 25 | Y | |
| A 103R | | J3-B | 19 | N | | S3A- 7A | 25 | Y | |
| A 104 | 1 | | | | A 9 | | | | A 10 |
| | | | | | 7 8 | | | | |
| A 104A | 4 | SHLD A104 | 25 | N | | E3 | 25 | N | |
| A 104L | | J3-C* | 19 | N | | S3A- 6B | 25 | Y | |
| A 104R | | J3-C | 19 | N | | S3A- 6A | 25 | Y | |
| A 105 | 1 | | | | A 9 | | | | A 10 |
| | | | | | 7 8 | | | | |
| A 105A | 4 | SHLD A105 | 25 | N | | E3 | 25 | N | |
| A 105L | | J3-D* | 19 | N | | S3A- 5B | 25 | Y | |
| A 105R | | J3-D | 19 | N | | S3A- 5A | 25 | Y | |
| A 106 | 1 | | | | A 9 | | | | A 10 |
| | | | | | 7 8 | | | | |
| A 106A | 4 | SHLD A106 | 25 | N | | E3 | 25 | N | |
| A 106L | | J3-E* | 19 | N | | S3A- 4B | 25 | Y | |
| A 106R | | J3-E | 19 | N | | S3A- 4A | 25 | Y | |

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096 | SCALE-NONE | REV LTR F | SHEET 13 OF 47

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GBS WIRING HARNESS A F 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. ITEM NO. | TO CIRCUIT POINT | 2 | T I N | TERMINATION SPEC ITEM NO. |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | 7 8 | | | | |
| A 114A | 4 | SHLD A114 | 25 | N | | E5 | 25 | N | 13 19 |
| A 114L | | J3-P* | 19 | N | | S1A- 3B | 25 | Y | |
| A 114R | | J3-P | 19 | N | | S1A- 3A | 25 | Y | |
| A 115 | 1 | | | | A 9 | | | | A 10 |
| | | | | | 7 8 | | | | |
| A 115A | 4 | SHLD A115 | 25 | N | | E5 | 25 | N | |
| A 115L | | J3-R* | 19 | N | | S8A- 4B | 25 | Y | |
| A 115R | | J3-R | 19 | N | | S8A- 4A | 25 | Y | |
| A 116 | 1 | | | | A 9 | | | | A 10 |
| | | | | | 7 8 | | | | |
| A 116A | 4 | SHLD A116 | 25 | N | | E5 | 25 | N | |
| A 116L | | J3-S* | 19 | N | | S2B- 4B | 25 | Y | |
| A 116R | | J3-S | 19 | N | | S2B- 4A | 25 | Y | |
| A 117 | 1 | | | | A 9 | | | | A 10 |
| | | | | | 7 8 | | | | |
| A 117A | 4 | SHLD A117 | 25 | N | | E5 | 25 | N | |
| A 117L | | J3-T* | 19 | N | | S1A- 4B | 25 | Y | |

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096 | SCALE-NONE | REV LTR F | SHEET 16 OF 47

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GBS WIRING HARNESS A F 1900096

| CONDUCTOR | | | FROM | | | | | | | TO | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC. 1 ITEM NO. | | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC 1 ITEM NO. | | NO. |
| A 125B | 3 | | P5-64 | 19 | N | | 18 | | | SHLD A125 | 25 | N | | | | |
| A 125E | | | J4-B1 | 13 | N | | 14 | | | P5-13 | 19 | N | | 18 | | |
| A 125X | | | J4-B2 | | | 28 | | | | SHLD A125 | | | | | | |
| A 126 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 126B | 3 | | P5-62 | 19 | N | | 18 | | | SHLD A126 | 25 | N | | | | |
| A 126E | | | J4-C1 | 13 | N | | 14 | | | P5- 9 | 19 | N | | 18 | | |
| A 126X | | | J4-C2 | | | 28 | | | | SHLD A126 | | | | | | |
| A 127 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 127B | 3 | | P5-58 | 19 | N | | 18 | | | SHLD A127 | 25 | N | | | | |
| A 127E | | | J4-D1 | 13 | N | | 14 | | | P5- 7 | 19 | N | | 18 | | |
| A 127X | | | J4-D2 | | | 28 | | | | SHLD A127 | | | | | | |
| A 128 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 128B | 3 | | P5-60 | 19 | N | | 18 | | | SHLD A128 | 25 | N | | | | |
| A 128E | | | J4-E1 | 13 | N | | 14 | | | P5- 5 | 19 | N | | 18 | | |
| A 128X | | | J4-E2 | | | 28 | | | | SHLD A128 | | | | | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GBS WIRING HARNESS A F 1900096

| CONDUCTOR | | | FROM | | | | | | | TO | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC. 1 ITEM NO. | | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC 1 ITEM NO. | | NO. |
| A 129 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 129B | 3 | | P5-50 | 19 | N | | 18 | | | SHLD A129 | 25 | N | | | | |
| A 129E | | | J4-F1 | 13 | N | | 14 | | | P5- 3 | 19 | N | | 18 | | |
| A 129X | | | J4-F2 | | | 28 | | | | SHLD A129 | | | | | | |
| A 130 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 130B | 3 | | P5-52 | 19 | N | | 18 | | | SHLD A130 | 25 | N | | | | |
| A 130E | | | J4-G1 | 13 | N | | 14 | | | P5- 1 | 19 | N | | 18 | | |
| A 130X | | | J4-G2 | | | 28 | | | | SHLD A130 | | | | | | |
| A 131 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 131B | 3 | | P5-16 | 19 | N | | 18 | | | SHLD A131 | 25 | N | | | | |
| A 131E | | | J4-H1 | 13 | N | | 14 | | | XF2- 1 | 25 | Y | | | | |
| A 131X | | | J4-H2 | | | 28 | | | | SHLD A131 | | | | | | |
| A 132 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 132B | 3 | | P5-14 | 19 | N | | 18 | | | SHLD A132 | 25 | N | | | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GBS WIRING HARNESS A F 1900096

| CONDUCTOR | | | FROM | | | | | | | TO | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC. 1 ITEM NO. | | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC 1 ITEM NO. | | NO. |
| A 117R | | | J3-T | 19 | N | | | | | S1A- 4A | 25 | Y | | | | |
| A 118 | 1 | | | | | | A | 9 | | | | | | A | 10 | |
| | | | | | | | 7 | 8 | | | | | | | | |
| A 118A | 4 | | SHLD A118 | 25 | N | | | | | E5 | 25 | N | | | | |
| A 118L | | | J3-U* | 19 | N | | | | | S1A- 5B | 25 | Y | | | | |
| A 118R | | | J3-U | 19 | N | | | | | S1A- 5A | 25 | Y | | | | |
| A 119 | 3 | | J3-AA | 19 | N | | | | | S2A- 1A | 25 | Y | | | | |
| A 120 | 3 | | J3-BB | 19 | N | | | | | S2A- 3A | 25 | Y | | | | |
| A 121 | 3 | | J3-CC | 19 | N | | | | | S2A- 2A | 25 | Y | | | | |
| A 122 | 3 | | J3-DD | 19 | N | | | | | S2A- 1B | 25 | Y | | | | |
| A 123 | 3 | | J3-EE | 19 | N | | | | | S2A- 3B | 25 | Y | | | | |
| A 124 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 124B | 3 | | P5-66 | 19 | N | | 18 | | | SHLD A124 | 25 | N | | | | |
| A 124E | | | J4-A1 | 13 | N | | 14 | | | P5-15 | 19 | N | | 18 | | |
| A 124X | | | J4-A2 | | | 28 | | | | SHLD A124 | | | | | | |
| A 125 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GBS WIRING HARNESS A F 1900096

| CONDUCTOR | | | FROM | | | | | | | TO | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC. 1 ITEM NO. | | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC 1 ITEM NO. | | NO. |
| A 132E | | | J4-J1 | 13 | N | | 14 | | | P5-63 | 19 | N | | 18 | | |
| A 132X | | | J4-J2 | | | 28 | | | | SHLD A132 | | | | | | |
| A 133 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 133B | 3 | | P1-62 | 19 | N | | 18 | | | SHLD A133 | 25 | N | | | | |
| A 133E | | | J5-A1 | 13 | N | | 14 | | | P1-25 | 19 | N | | 18 | | |
| A 133X | | | J5-A2 | | | 28 | | | | SHLD A133 | | | | | | |
| A 134 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 134B | 3 | | P1-64 | 19 | N | | 18 | | | SHLD A134 | 25 | N | | | | |
| A 134E | | | J5-B1 | 13 | N | | 14 | | | P1-23 | 19 | N | | 18 | | |
| A 134X | | | J5-B2 | | | 28 | | | | SHLD A134 | | | | | | |
| A 135 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 135B | 3 | | P1-66 | 19 | N | | 18 | | | SHLD A135 | 25 | N | | | | |
| A 135E | | | J5-C1 | 13 | N | | 14 | | | P1-21 | 19 | N | | 18 | | |
| A 135X | | | J5-C2 | | | 28 | | | | SHLD A135 | | | | | | |
| A 136 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
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INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | FROM CIRCUIT POINT | STRIP WIRE OR JACKET 2 | TIN | CUT WIRE OR SHIELD 2 | TERMINATION SPEC. 1 ITEM NO. | | NO. | TO CIRCUIT POINT | STRIP WIRE OR JACKET 2 | TIN | CUT WIRE OR SHIELD 2 | TERMINATION SPEC 1 ITEM NO. | | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 139X | | | J5-G2 | | | 28 | | | | SHLD A139 | | | | | | |
| A 140 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 140B | 3 | | P1-53 | 19 | N | | 18 | | | SHLD A140 | 25 | N | | | | |
| A 140E | | | J5-H1 | 13 | N | | 14 | | | P1- 9 | 19 | N | | 18 | | |
| A 140X | | | J5-H2 | | | 28 | | | | SHLD A140 | | | | | | |
| A 141 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 141B | 3 | | P1-54 | 19 | N | | 18 | | | SHLD A141 | 25 | N | | | | |
| A 141E | | | J5-J1 | 13 | N | | 14 | | | P1- 7 | 19 | N | | 18 | | |
| A 141X | | | J5-J2 | | | 28 | | | | SHLD A141 | | | | | | |
| A 142 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 142B | 3 | | P1-43 | 19 | N | | 18 | | | SHLD A142 | 25 | N | | | | |
| A 142E | | | J6-A1 | 13 | N | | 14 | | | P1- 5 | 19 | N | | 18 | | |
| A 142X | | | J6-A2 | | | 28 | | | | SHLD A142 | | | | | | |
| A 143 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1900096
SCALE - NONE
REV LTR F
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| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | FROM CIRCUIT POINT | STRIP WIRE OR JACKET 2 | TIN | CUT WIRE OR SHIELD 2 | TERMINATION SPEC. 1 ITEM NO. | | NO. | TO CIRCUIT POINT | STRIP WIRE OR JACKET 2 | TIN | CUT WIRE OR SHIELD 2 | TERMINATION SPEC 1 ITEM NO. | | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 143B | 3 | | P1-44 | 19 | N | | 18 | | | SHLD A143 | 25 | N | | | | |
| A 143E | | | J6-B1 | 13 | N | | 14 | | | P1- 3 | 19 | N | | 18 | | |
| A 143X | | | J6-B2 | | | 28 | | | | SHLD A143 | | | | | | |
| A 144 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 144B | 3 | | P1-24 | 19 | N | | 18 | | | SHLD A144 | 25 | N | | | | |
| A 144E | | | J6-C1 | 13 | N | | 14 | | | P1- 1 | 19 | N | | 18 | | |
| A 144X | | | J6-C2 | | | 28 | | | | SHLD A144 | | | | | | |
| A 145 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 145B | 3 | | P1-22 | 19 | N | | 18 | | | SHLD A145 | 25 | N | | | | |
| A 145E | | | J6-D1 | 13 | N | | 14 | | | P1-61 | 19 | N | | 18 | | |
| A 145X | | | J6-D2 | | | 28 | | | | SHLD A145 | | | | | | |
| A 146 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 146B | 3 | | P1-20 | 19 | N | | 18 | | | SHLD A146 | 25 | N | | | | |
| A 146E | | | J6-E1 | 13 | N | | 14 | | | P1-63 | 19 | N | | 18 | | |
| A 146X | | | J6-E2 | | | 28 | | | | SHLD A146 | | | | | | |

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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HOUSTON, TEXAS
SIZE A
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REV LTR F
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| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | FROM CIRCUIT POINT | STRIP WIRE OR JACKET 2 | TIN | CUT WIRE OR SHIELD 2 | TERMINATION SPEC. 1 ITEM NO. | | NO. | TO CIRCUIT POINT | STRIP WIRE OR JACKET 2 | TIN | CUT WIRE OR SHIELD 2 | TERMINATION SPEC 1 ITEM NO. | | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 136B | 3 | | P1-56 | 19 | N | | 18 | | | SHLD A136 | 25 | N | | | | |
| A 136E | | | J5-D1 | 13 | N | | 14 | | | P1-19 | 19 | N | | 18 | | |
| A 136X | | | J5-D2 | | | 28 | | | | SHLD A136 | | | | | | |
| A 137 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 137B | 3 | | P1-58 | 19 | N | | 18 | | | SHLD A137 | 25 | N | | | | |
| A 137E | | | J5-E1 | 13 | N | | 14 | | | P1-17 | 19 | N | | 18 | | |
| A 137X | | | J5-E2 | | | 28 | | | | SHLD A137 | | | | | | |
| A 138 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 138B | 3 | | P1-60 | 19 | N | | 18 | | | SHLD A138 | 25 | N | | | | |
| A 138E | | | J5-F1 | 13 | N | | 14 | | | P1-13 | 19 | N | | 18 | | |
| A 138X | | | J5-F2 | | | 28 | | | | SHLD A138 | | | | | | |
| A 139 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 139B | 3 | | P1-52 | 19 | N | | 18 | | | SHLD A139 | 25 | N | | | | |
| A 139E | | | J5-G1 | 13 | N | | 14 | | | P1-11 | 19 | N | | 18 | | |

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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REV LTR F
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| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | FROM CIRCUIT POINT | STRIP WIRE OR JACKET 2 | TIN | CUT WIRE OR SHIELD 2 | TERMINATION SPEC. 1 ITEM NO. | | NO. | TO CIRCUIT POINT | STRIP WIRE OR JACKET 2 | TIN | CUT WIRE OR SHIELD 2 | TERMINATION SPEC 1 ITEM NO. | | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 147 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 147B | 3 | | P1-18 | 19 | N | | 18 | | | SHLD A147 | 25 | N | | | | |
| A 147E | | | J6-F1 | 13 | N | | 14 | | | P1-65 | 19 | N | | 18 | | |
| A 147X | | | J6-F2 | | | 28 | | | | SHLD A147 | | | | | | |
| A 148 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 148B | 3 | | P1-16 | 19 | N | | 18 | | | SHLD A148 | 25 | N | | | | |
| A 148E | | | J6-G1 | 13 | N | | 14 | | | P1-55 | 19 | N | | 18 | | |
| A 148X | | | J6-G2 | | | 28 | | | | SHLD A148 | | | | | | |
| A 149 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 149B | 3 | | P1-14 | 19 | N | | 18 | | | SHLD A149 | 25 | N | | | | |
| A 149E | | | J6-H1 | 13 | N | | 14 | | | P1-57 | 19 | N | | 18 | | |
| A 149X | | | J6-H2 | | | 28 | | | | SHLD A149 | | | | | | |
| A 150 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 150B | 3 | | P6- 3 | 19 | N | | 18 | | | SHLD A150 | 25 | N | | | | |

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

GBS WIRING HARNESS A F 1900096

| CONDUCTOR INDIVIDUAL LENGTH | | | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | TERMINATION SPEC. ▷1 | | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | TERMINATION SPEC ▷1 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | ▷2 | CIRCUIT POINT | ▷2 | T I N | ▷2 | ITEM NO. | NO. | CIRCUIT POINT | ▷2 | T I N | ▷2 | ITEM NO. | NO. |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 154B | 3 | | P2-30 | 19 | N | | 17 | | SHLD A154 | 25 | N | | | |
| A 154E | | | J7-E1 | 13 | N | | 14 | | P2-44 | 19 | N | | 18 | |
| A 154X | | | J7-E2 | | | 28 | | | SHLD A154 | | | | | |
| A 155 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 155B | 3 | | P2-20 | 19 | N | | 17 | | SHLD A155 | 25 | N | | | |
| A 155E | | | J7-F1 | 13 | N | | 14 | | P2-43 | 19 | N | | 18 | |
| A 155X | | | J7-F2 | | | 28 | | | SHLD A155 | | | | | |
| A 156 | 29 | | | | | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 156B | 3 | | P2-22 | 19 | N | | 17 | | SHLD A156 | 25 | N | | | |
| A 156E | | | J7-G1 | 13 | N | | 14 | | P2-39 | 19 | N | | 18 | |
| A 156X | | | J7-G2 | | | 28 | | | SHLD A156 | | | | | |
| A 157 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 157B | 3 | | P2-23 | 19 | N | | 17 | | SHLD A157 | 25 | N | | | |
| A 157E | | | J7-H1 | 13 | N | | 14 | | P2-38 | 19 | N | | 18 | |

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR INDIVIDUAL LENGTH | | | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | TERMINATION SPEC. ▷1 | | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | TERMINATION SPEC ▷1 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | ▷2 | CIRCUIT POINT | ▷2 | T I N | ▷2 | ITEM NO. | NO. | CIRCUIT POINT | ▷2 | T I N | ▷2 | ITEM NO. | NO. |
| A 157X | | | J7-H2 | | | 28 | | | SHLD A157 | | | | | |
| A 158 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 158B | 3 | | P2-24 | 19 | N | | 17 | | SHLD A158 | 25 | N | | | |
| A 158E | | | J7-J1 | 13 | N | | 14 | | P2-37 | 19 | N | | 18 | |
| A 158X | | | J7-J2 | | | 28 | | | SHLD A158 | | | | | |
| A 159 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 159B | 3 | | P2-13 | 19 | N | | 17 | | SHLD A159 | 25 | N | | | |
| A 159E | | | J8-A1 | 13 | N | | 14 | | P2-33 | 19 | N | | 18 | |
| A 159X | | | J8-A2 | | | 28 | | | SHLD A159 | | | | | |
| A 160 | 29 | | | 56 | | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 160B | 3 | | P2-14 | 19 | N | | 17 | | SHLD A160 | 25 | N | | | |
| A 160E | | | J8-B1 | 13 | N | | 14 | | P2-32 | 19 | N | | 18 | |
| A 160X | | | J8-B2 | | | 28 | | | SHLD A160 | | | | | |
| A 161 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GBS WIRING HARNESS A F 1900096

| CONDUCTOR INDIVIDUAL LENGTH | | | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | TERMINATION SPEC. ▷1 | | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | TERMINATION SPEC ▷1 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | ▷2 | CIRCUIT POINT | ▷2 | T I N | ▷2 | ITEM NO. | NO. | CIRCUIT POINT | ▷2 | T I N | ▷2 | ITEM NO. | NO. |
| A 150E | | | J7-A1 | 13 | N | | 14 | | P6- 4 | 19 | N | | 18 | |
| A 150X | | | J7-A2 | | | 28 | | | SHLD A150 | | | | | |
| A 151 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 151B | 3 | | P2-36 | 19 | N | | 17 | | SHLD A151 | 25 | N | | | |
| A 151E | | | J7-B1 | 13 | N | | 14 | | P2-51 | 19 | N | | 18 | |
| A 151X | | | J7-B2 | | | 28 | | | SHLD A151 | | | | | |
| A 152 | 29 | | | 56 | | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 152B | 3 | | P2-26 | 19 | N | | 17 | | SHLD A152 | 25 | N | | | |
| A 152E | | | J7-C1 | 13 | N | | 14 | | P2-49 | 19 | N | | 18 | |
| A 152X | | | J7-C2 | | | 28 | | | SHLD A152 | | | | | |
| A 153 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 153B | 3 | | P2-28 | 19 | N | | 17 | | SHLD A153 | 25 | N | | | |
| A 153E | | | J7-D1 | 13 | N | | 14 | | P2-48 | 19 | N | | 18 | |
| A 153X | | | J7-D2 | | | 28 | | | SHLD A153 | | | | | |
| A 154 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GBS WIRING HARNESS A F 1900096

| CONDUCTOR INDIVIDUAL LENGTH | | | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | TERMINATION SPEC. ▷1 | | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | TERMINATION SPEC ▷1 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | ▷2 | CIRCUIT POINT | ▷2 | T I N | ▷2 | ITEM NO. | NO. | CIRCUIT POINT | ▷2 | T I N | ▷2 | ITEM NO. | NO. |
| A 161B | 3 | | P2-15 | 19 | N | | 17 | | SHLD A161 | 25 | N | | | |
| A 161E | | | J8-C1 | 13 | N | | 14 | | P2-31 | 19 | N | | 18 | |
| A 161X | | | J8-C2 | | | 28 | | | SHLD A161 | | | | | |
| A 162 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 162B | 3 | | P2-50 | 19 | N | | 17 | | SHLD A162 | 25 | N | | | |
| A 162E | | | J8-D1 | 13 | N | | 14 | | P2-34 | 19 | N | | 18 | |
| A 162X | | | J8-D2 | | | 28 | | | SHLD A162 | | | | | |
| A 163 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 163B | 3 | | P2-47 | 19 | N | | 17 | | SHLD A163 | 25 | N | | | |
| A 163E | | | J8-E1 | 13 | N | | 14 | | P2-35 | 19 | N | | 18 | |
| A 163X | | | J8-E2 | | | 28 | | | SHLD A163 | | | | | |
| A 164 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 164B | 3 | | P2-46 | 19 | N | | 17 | | SHLD A164 | 25 | N | | | |
| A 164E | | | J8-F1 | 13 | N | | 14 | | P2-25 | 19 | N | | 18 | |
| A 164X | | | J8-F2 | | | 28 | | | SHLD A164 | | | | | |

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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INCHES
0 1 2
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| CONDUCTOR | | | FROM | | | | | | | TO | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH | | | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | TERMINATION SPEC. ▷1 | | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | TERMINATION SPEC ▷1 | | NO. |
| NUMBER | ITEM NO. | ▷2 | CIRCUIT POINT | ▷2 | T I N | ▷2 | ITEM NO. | | | CIRCUIT POINT | ▷2 | T I N | ▷2 | ITEM NO. | | |
| A 168E | | | J9-A1 | 13 | N | | 14 | | | P6- 8 | 19 | N | | 18 | | |
| A 168X | | | J9-A2 | | | 28 | | | | SHLD A168 | | | | | | |
| A 169 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 169B | 3 | | P6-10 | 19 | N | | 18 | | | SHLD A169 | 25 | N | | | | |
| A 169E | | | J9-B1 | 13 | N | | 14 | | | P6- 9 | 19 | N | | 18 | | |
| A 169X | | | J9-B2 | | | 28 | | | | SHLD A169 | | | | | | |
| A 170 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 170B | 3 | | P5-12 | 19 | N | | 18 | | | SHLD A170 | 25 | N | | | | |
| A 170E | | | J9-C1 | 13 | N | | 14 | | | P5-61 | 19 | N | | 18 | | |
| A 170X | | | J9-C2 | | | | 28 | | | SHLD A170 | | | | | | |
| A 171 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 171B | 3 | | P5-11 | 19 | N | | 18 | | | SHLD A171 | 25 | N | | | | |
| A 171E | | | J9-D1 | 13 | N | | 14 | | | P5-55 | 19 | N | | 18 | | |
| A 171X | | | J9-D2 | | | 28 | | | | SHLD A171 | | | | | | |
| A 172 | 29 | | | 56 | | | A | 30 | | | | | | A | 10 | |

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR | | | FROM | | | | | | | TO | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH | | | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | TERMINATION SPEC. ▷1 | | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | TERMINATION SPEC ▷1 | | NO. |
| NUMBER | ITEM NO. | ▷2 | CIRCUIT POINT | ▷2 | T I N | ▷2 | ITEM NO. | | | CIRCUIT POINT | ▷2 | T I N | ▷2 | ITEM NO. | | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 172B | 3 | | P5- 8 | 19 | N | | 18 | | | SHLD A172 | 25 | N | | | | |
| A 172E | | | J9-E1 | 13 | N | | 14 | | | P5-57 | 19 | N | | 18 | | |
| A 172X | | | J9-E2 | | | 28 | | | | SHLD A172 | | | | | | |
| A 173 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 173B | 3 | | P5- 6 | 19 | N | | 18 | | | SHLD A173 | 25 | N | | | | |
| A 173E | | | J9-F1 | 13 | N | | 14 | | | P5-59 | 19 | N | | 18 | | |
| A 173X | | | J9-F2 | | | 28 | | | | SHLD A173 | | | | | | |
| A 174 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 174B | 3 | | P5- 4 | 19 | N | | 18 | | | SHLD A174 | 25 | N | | | | |
| A 174E | | | J9-G1 | 13 | N | | 14 | | | P5-49 | 19 | N | | 18 | | |
| A 174X | | | J9-G2 | | | 28 | | | | SHLD A174 | | | | | | |
| A 175 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 175B | 3 | | P5- 2 | 19 | N | | 18 | | | SHLD A175 | 25 | N | | | | |
| A 175E | | | J9-H1 | 13 | N | | 14 | | | P5-51 | 19 | N | | 18 | | |

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR | | | FROM | | | | | | | TO | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH | | | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | TERMINATION SPEC. ▷1 | | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | TERMINATION SPEC ▷1 | | NO. |
| NUMBER | ITEM NO. | ▷2 | CIRCUIT POINT | ▷2 | T I N | ▷2 | ITEM NO. | | | CIRCUIT POINT | ▷2 | T I N | ▷2 | ITEM NO. | | |
| A 165 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 165B | 3 | | P2-45 | 19 | N | | 17 | | | SHLD A165 | 25 | N | | | | |
| A 165E | | | J8-G1 | 13 | N | | 14 | | | P2-27 | 19 | N | | 18 | | |
| A 165X | | | J8-G2 | | | 28 | | | | SHLD A165 | | | | | | |
| A 166 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 166B | 3 | | P2-42 | 19 | N | | 17 | | | SHLD A166 | 25 | N | | | | |
| A 166E | | | J8-H1 | 13 | N | | 14 | | | P2-29 | 19 | N | | 18 | | |
| A 166X | | | J8-H2 | | | 28 | | | | SHLD A166 | | | | | | |
| A 167 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 167B | 3 | | P2-41 | 19 | N | | 17 | | | SHLD A167 | 25 | N | | | | |
| A 167E | | | J8-J1 | 13 | N | | 14 | | | P2-19 | 19 | N | | 18 | | |
| A 167X | | | J8-J2 | | | 28 | | | | SHLD A167 | | | | | | |
| A 168 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 168B | 3 | | P6- 7 | 19 | N | | 18 | | | SHLD A168 | 25 | N | | | | |

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR | | | FROM | | | | | | | TO | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH | | | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | TERMINATION SPEC. ▷1 | | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | TERMINATION SPEC ▷1 | | NO. |
| NUMBER | ITEM NO. | ▷2 | CIRCUIT POINT | ▷2 | T I N | ▷2 | ITEM NO. | | | CIRCUIT POINT | ▷2 | T I N | ▷2 | ITEM NO. | | |
| A 175X | | | J9-H2 | | | 28 | | | | SHLD A175 | | | | | | |
| A 176 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 176B | 3 | | P3-11 | 19 | N | | 18 | | | SHLD A176 | 25 | N | | | | |
| A 176E | | | J10-A1 | 13 | N | | 14 | | | P3-58 | 19 | N | | 18 | | |
| A 176X | | | J10-A2 | | | 28 | | | | SHLD A176 | | | | | | |
| A 177 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 177B | 3 | | P3- 9 | 19 | N | | 18 | | | SHLD A177 | 25 | N | | | | |
| A 177E | | | J10-B1 | 13 | N | | 14 | | | P3-50 | 19 | N | | 18 | | |
| A 177X | | | J10-B2 | | | 28 | | | | SHLD A177 | | | | | | |
| A 178 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 178B | 3 | | P3- 7 | 19 | N | | 18 | | | SHLD A178 | 25 | N | | | | |
| A 178E | | | J10-C1 | 13 | N | | 14 | | | P3-52 | 19 | N | | 18 | | |
| A 178X | | | J10-C2 | | | 28 | | | | SHLD A178 | | | | | | |
| A 179 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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INCHES
0 1 2
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| CONDUCTOR | | | FROM | | | | | | | TO | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH | | | CUT WIRE OR SHIELD<br>STRIP WIRE OR JACKET | | | | TERMINATION SPEC. 1 | | NO. | CUT WIRE OR SHIELD<br>STRIP WIRE OR JACKET | | | | TERMINATION SPEC 1 | | NO. |
| NUMBER | ITEM NO. | 2 | CIRCUIT POINT | 2 | T I N | 2 | ITEM NO. | | | CIRCUIT POINT | 2 | T I N | 2 | ITEM NO. | | |
| A 187 | 3 | | J11- 6 | 19 | N | | 17 | | | P2-49 | 19 | N | | | | |
| A 188 | 3 | | J11- 7 | 19 | N | | 17 | | | P1-21 | 19 | N | | | | |
| A 189 | 3 | | J11- 8 | 19 | N | | 17 | | | P3-20 | 19 | N | | 17 | | |
| A 190 | 3 | | J11- 9 | 19 | N | | 17 | | | P2-48 | 19 | N | | | | |
| A 191 | 3 | | J11-10 | 19 | N | | 17 | | | P1-19 | 19 | N | | | | |
| A 192 | 3 | | J11-11 | 19 | N | | 17 | | | P3-18 | 19 | N | | 17 | | |
| A 193 | 3 | | J11-12 | 19 | N | | 17 | | | P2-44 | 19 | N | | | | |
| A 194 | 3 | | J11-13 | 19 | N | | 17 | | | P1-17 | 19 | N | | | | |
| A 195 | 3 | | J11-14 | 19 | N | | 17 | | | P3-16 | 19 | N | | 17 | | |
| A 196 | 3 | | J11-15 | 19 | N | | 17 | | | P2-43 | 19 | N | | | | |
| A 197 | 3 | | J11-16 | 19 | N | | 17 | | | P1-13 | 19 | N | | | | |
| A 198 | 3 | | J11-17 | 19 | N | | 17 | | | P3-14 | 19 | N | | 17 | | |
| A 199 | 3 | | J11-18 | 19 | N | | 17 | | | P2-39 | 19 | N | | | | |
| A 200 | 3 | | J11-19 | 19 | N | | 17 | | | P1-11 | 19 | N | | | | |
| A 201 | 3 | | J11-20 | 19 | N | | 17 | | | P3-12 | 19 | N | | 17 | | |
| A 202 | 3 | | J11-21 | 19 | N | | 17 | | | P2-38 | 19 | N | | | | |
| A 203 | 3 | | J11-22 | 19 | N | | 17 | | | P1- 9 | 19 | N | | | | |
| A 204 | 3 | | J11-23 | 19 | N | | 17 | | | P3-10 | 19 | N | | 17 | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1900096
SCALE - NONE REV LTR F SHEET 34 OF 47

MIL 2085 - 4-63 WIR

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GBS WIRING HARNESS A F 1900096

| CONDUCTOR | | | FROM | | | | | | | TO | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH | | | CUT WIRE OR SHIELD<br>STRIP WIRE OR JACKET | | | | TERMINATION SPEC. 1 | | NO. | CUT WIRE OR SHIELD<br>STRIP WIRE OR JACKET | | | | TERMINATION SPEC 1 | | NO. |
| NUMBER | ITEM NO. | 2 | CIRCUIT POINT | 2 | T I N | 2 | ITEM NO. | | | CIRCUIT POINT | 2 | T I N | 2 | ITEM NO. | | |
| A 205 | 3 | | J11-24 | 19 | N | | 17 | | | P2-37 | 19 | N | | | | |
| A 206 | 3 | | J11-25 | 19 | N | | 17 | | | P1- 7 | 19 | N | | | | |
| A 207 | 3 | | J11-26 | 19 | N | | 17 | | | P3- 8 | 19 | N | | 17 | | |
| A 208 | 3 | | J11-27 | 19 | N | | 17 | | | P2-33 | 19 | N | | | | |
| A 209 | 3 | | J11-28 | 19 | N | | 17 | | | P1- 5 | 19 | N | | | | |
| A 210 | 3 | | J11-29 | 19 | N | | 17 | | | P3- 6 | 19 | N | | 17 | | |
| A 211 | 3 | | J11-30 | 19 | N | | 17 | | | P2-32 | 19 | N | | | | |
| A 212 | 3 | | J11-31 | 19 | N | | 17 | | | P1- 3 | 19 | N | | | | |
| A 213 | 3 | | J11-32 | 19 | N | | 17 | | | P3- 4 | 19 | N | | 17 | | |
| A 214 | 3 | | J11-33 | 19 | N | | 17 | | | P2-31 | 19 | N | | | | |
| A 215 | 3 | | J11-34 | 19 | N | | 17 | | | P1- 1 | 19 | N | | | | |
| A 216 | 3 | | J11-35 | 19 | N | | 17 | | | P3- 2 | 19 | N | | 17 | | |
| A 217 | 3 | | J11-36 | 19 | N | | 17 | | | P2-34 | 19 | N | | | | |
| A 218 | 3 | | J11-37 | 19 | N | | 17 | | | P1-61 | 19 | N | | | | |
| A 219 | 3 | | J11-38 | 19 | N | | 17 | | | P3-61 | 19 | N | | 17 | | |
| A 220 | 3 | | J11-39 | 19 | N | | 17 | | | P2-35 | 19 | N | | | | |
| A 221 | 3 | | J11-40 | 19 | N | | 17 | | | P1-63 | 19 | N | | | | |
| A 222 | 3 | | J11-41 | 19 | N | | 17 | | | P3-62 | 19 | N | | 17 | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
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SCALE - NONE REV LTR F SHEET 35 OF 47

MIL 2085 - 4-63 WIR

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GBS WIRING HARNESS A F 1900096

| CONDUCTOR | | | FROM | | | | | | | TO | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH | | | CUT WIRE OR SHIELD<br>STRIP WIRE OR JACKET | | | | TERMINATION SPEC. 1 | | NO. | CUT WIRE OR SHIELD<br>STRIP WIRE OR JACKET | | | | TERMINATION SPEC 1 | | NO. |
| NUMBER | ITEM NO. | 2 | CIRCUIT POINT | 2 | T I N | 2 | ITEM NO. | | | CIRCUIT POINT | 2 | T I N | 2 | ITEM NO. | | |
| A 179B | 3 | | P3- 5 | 19 | N | | 18 | | | SHLD A179 | 25 | N | | | | |
| A 179E | | | J10-D1 | 13 | N | | 14 | | | P3-54 | 19 | N | | 18 | | |
| A 179X | | | J10-D2 | | | 28 | | | | SHLD A179 | | | | | | |
| A 180 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 180B | 3 | | P3- 3 | 19 | N | | 18 | | | SHLD A180 | 25 | N | | | | |
| A 180E | | | J10-E1 | 13 | N | | 14 | | | P3-44 | 19 | N | | 18 | | |
| A 180X | | | J10-E2 | | | 28 | | | | SHLD A180 | | | | | | |
| A 181 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 181B | 3 | | P3- 1 | 19 | N | | 17 | | | SHLD A181 | 25 | N | | | | |
| A 181E | | | J10-F1 | 13 | N | | 14 | | | P3-46 | 19 | N | | 17 | | |
| A 181X | | | J10-F2 | | | 28 | | | | SHLD A181 | | | | | | |
| A 182 | 3 | | J11- 1 | 19 | N | | 17 | | | P1-25 | 19 | N | | | | |
| A 183 | 3 | | J11- 2 | 19 | N | | 17 | | | P3-24 | 19 | N | | 17 | | |
| A 184 | 3 | | J11- 3 | 19 | N | | 17 | | | P2-51 | 19 | N | | | | |
| A 185 | 3 | | J11- 4 | 19 | N | | 17 | | | P1-23 | 19 | N | | | | |
| A 186 | 3 | | J11- 5 | 19 | N | | 17 | | | P3-22 | 19 | N | | 17 | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
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SCALE - NONE REV LTR F SHEET 33 OF 47

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GBS WIRING HARNESS A F 1900096

| CONDUCTOR | | | FROM | | | | | | | TO | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH | | | CUT WIRE OR SHIELD<br>STRIP WIRE OR JACKET | | | | TERMINATION SPEC. 1 | | NO. | CUT WIRE OR SHIELD<br>STRIP WIRE OR JACKET | | | | TERMINATION SPEC 1 | | NO. |
| NUMBER | ITEM NO. | 2 | CIRCUIT POINT | 2 | T I N | 2 | ITEM NO. | | | CIRCUIT POINT | 2 | T I N | 2 | ITEM NO. | | |
| A 223 | 3 | | J11-42 | 19 | N | | 17 | | | P2-25 | 19 | N | | | | |
| A 224 | 3 | | J11-43 | 19 | N | | 17 | | | P1-65 | 19 | N | | | | |
| A 225 | 3 | | J11-44 | 19 | N | | 17 | | | P3-64 | 19 | N | | 17 | | |
| A 226 | 3 | | J11-45 | 19 | N | | 17 | | | P2-27 | 19 | N | | | | |
| A 227 | 3 | | J11-46 | 19 | N | | 17 | | | P1-55 | 19 | N | | | | |
| A 228 | 3 | | J11-47 | 19 | N | | 17 | | | P3-66 | 19 | N | | 17 | | |
| A 229 | 3 | | J11-48 | 19 | N | | 17 | | | P2-29 | 19 | N | | | | |
| A 230 | 3 | | J11-49 | 19 | N | | 17 | | | P1-57 | 19 | N | | | | |
| A 231 | 3 | | J11-50 | 19 | N | | 17 | | | P3-56 | 19 | N | | 17 | | |
| A 232 | 3 | | J11-51 | 19 | N | | 17 | | | P2-19 | 19 | N | | | | |
| A 236 | 3 | | J12- 1 | 19 | N | | 17 | | | P2-52 | 19 | N | | 18 | | |
| A 237 | 3 | | J12- 2 | 19 | N | | 17 | | | P2-53 | 19 | N | | 18 | | |
| A 238 | 3 | | J12- 3 | 19 | N | | 17 | | | P2-54 | 19 | N | | 18 | | |
| A 239 | 3 | | J12- 4 | 19 | N | | 17 | | | P2-55 | 19 | N | | 18 | | |
| A 240 | 3 | | J12- 5 | 19 | N | | 17 | | | P2-56 | 19 | N | | 18 | | |
| A 241 | 3 | | J12- 6 | 19 | N | | 17 | | | P2-57 | 19 | N | | 18 | | |
| A 242 | 3 | | J12- 7 | 19 | N | | 17 | | | P2-58 | 19 | N | | 18 | | |
| A 243 | 3 | | J12- 8 | 19 | N | | 17 | | | P2-59 | 19 | N | | 18 | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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HOUSTON, TEXAS
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MIL 2085 - 4-63 WIR

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

GBS

WIRING HARNESS A

F 1900096

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | FROM TERMINATION SPEC. 1 ITEM NO. | TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TO TERMINATION SPEC 1 ITEM NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 262 | 3 | J12-29 | 19 | N | 18 | P5-18 | 19 | N | 17 |
| A 263 | 3 | J12-30 | 19 | N | 18 | P7-10 | 19 | N | 17 |
| A 264 | 3 | P1-14 | 19 | N |  | P3-15 | 19 | N | 17 |
| A 265 | 3 | P1-16 | 19 | N |  | P3-17 | 19 | N | 17 |
| A 266 | 3 | P1-18 | 19 | N | 18 | P3-19 | 19 | N | 17 |
| A 267 | 3 | P1-20 | 19 | N |  | P3-21 | 19 | N | 17 |
| A 268 | 3 | P1-22 | 19 | N |  | P3-23 | 19 | N | 17 |
| A 269 | 3 | P1-24 | 19 | N |  | P3-25 | 19 | N | 17 |
| A 270 | 3 | P1-43 | 19 | N |  | P3-45 | 19 | N | 17 |
| A 271 | 3 | P1-44 | 19 | N |  | P3-47 | 19 | N | 17 |
| A 272 | 1 |  |  |  | A 10 |  |  |  | A 9 |
|  |  |  |  |  |  |  |  |  | 7 8 |
| A 272B | 4 | E27 | 25 | N |  | SHLD A272 | 25 | N |  |
| A 272L |  | P1-15 | 19 | N | 17 | P6- 2 | 19 | N | 17 |
| A 272R |  | P1-50 | 19 | N | 17 | P6- 1 | 19 | N | 17 |
| A 273 | 3 | P1-52 | 19 | N |  | P3-51 | 19 | N | 17 |
| A 274 | 3 | P1-53 | 19 | N |  | P3-53 | 19 | N | 17 |
| A 275 | 3 | P1-54 | 19 | N |  | P3-43 | 19 | N | 17 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE-NONE | REV LTR F | SHEET 38 OF 47

MIL 2085 - 4-63 WIR

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GBS

WIRING HARNESS A

F 1900096

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | FROM TERMINATION SPEC. 1 ITEM NO. | TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TO TERMINATION SPEC 1 ITEM NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 276 | 3 | P1-56 | 19 | N |  | P3-57 | 19 | N | 17 |
| A 277 |  | P1-58 | 19 | N |  | P3-59 | 19 | N | 17 |
| A 278 |  | P1-60 | 19 | N |  | P3-49 | 19 | N | 17 |
| A 279 | 3 | P1-62 | 19 | N |  | P3-63 | 19 | N | 17 |
| A 280 | 3 | P1-64 | 19 | N |  | P3-65 | 19 | N | 17 |
| A 281 | 3 | P1-66 | 19 | N |  | P3-55 | 19 | N | 17 |
| A 282 | 3 | P2-63 | 19 | N | 18 | P6-46 | 19 | N | 18 |
| A 283 | 1 |  |  |  | A 10 |  |  |  | A 9 |
|  |  |  |  |  |  |  |  |  | 7 8 |
| A 283B | 3 | E27 | 25 | N |  | SHLD A283 | 25 | N |  |
| A 283L |  | P2-40 | 19 | N | 17 | P6- 6 | 19 | N | 17 |
| A 283R |  | P2-21 | 19 | N | 17 | P6- 5 | 19 | N | 17 |
| A 284 | 3 | P3-13 | 19 | N | 17 | P6-19 | 19 | N | 17 |
| A 285 | 3 | P3-26 | 19 | N | 17 | S10SW2-NC | 25 | Y |  |
| A 286 | 3 | P3-32 | 19 | N | 18 | P5-38 | 19 | N | 17 |
| A 287 | 3 | P3-33 | 19 | N | 18 | P5-39 | 19 | N | 17 |
| A 288 | 3 | P3-37 | 19 | N | 18 | P5-44 | 19 | N | 17 |
| A 289 | 3 | P3-38 | 19 | N | 18 | P5-45 | 19 | N | 17 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE-NONE | REV LTR F | SHEET 39 OF 47

MIL 2085 - 4-63 WIR

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GBS

WIRING HARNESS A

F 1900096

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | FROM TERMINATION SPEC. 1 ITEM NO. | TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TO TERMINATION SPEC 1 ITEM NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 244 | 3 | J12- 9 | 19 | N | 17 | P2-60 | 19 | N | 18 |
| A 245 | 3 | J12-10 | 19 | N | 17 | P7-38 | 19 | N | 17 |
| A 246 | 3 | J12-11 | 19 | N | 18 | P2-61 | 19 | N | 18 |
| A 247 | 3 | J12-11 | 19 | N | 18 | S2A- 1A | 25 | Y |  |
| A 248 | 3 | J12-12 | 19 | N | 18 | P2-62 | 19 | N | 18 |
| A 249 | 3 | J12-12 | 19 | N | 18 | S2A- 3A | 25 | Y |  |
| A 250 | 3 | J12-16 | 19 | N | 18 | P3-48 | 19 | N | 18 |
| A 251 | 3 | J12-17 | 19 | N | 18 | P3-37 | 19 | N | 18 |
| A 252 | 3 | J12-18 | 19 | N | 18 | P3-38 | 19 | N | 18 |
| A 253 | 3 | J12-19 | 19 | N | 18 | P3-39 | 19 | N | 18 |
| A 254 | 3 | J12-20 | 19 | N | 18 | P3-40 | 19 | N | 18 |
| A 255 | 3 | J12-21 | 19 | N | 18 | P3-41 | 19 | N | 18 |
| A 256 | 3 | J12-22 | 19 | N | 18 | P3-42 | 19 | N | 18 |
| A 257 | 3 | J12-23 | 19 | N | 18 | P3-32 | 19 | N | 18 |
| A 258 | 3 | J12-24 | 19 | N | 18 | P3-33 | 19 | N | 18 |
| A 259 | 3 | J12-26 | 19 | N | 18 | P3-34 | 19 | N | 17 |
| A 260 | 3 | J12-27 | 19 | N | 18 | P3-31 | 19 | N | 17 |
| A 261 | 3 | J12-28 | 19 | N | 18 | P5-40 | 19 | N | 17 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

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MIL 2085 - 4-63 WIR

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GBS

WIRING HARNESS A

F 1900096

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | FROM TERMINATION SPEC. 1 ITEM NO. | TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TO TERMINATION SPEC 1 ITEM NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 290 | 3 | P3-39 | 19 | N | 18 | P5-46 | 19 | N | 17 |
| A 291 | 3 | P3-40 | 19 | N | 18 | P5-47 | 19 | N | 17 |
| A 292 | 3 | P3-41 | 19 | N | 18 | P5-48 | 19 | N | 17 |
| A 293 | 3 | P3-42 | 19 | N | 18 | P5-37 | 19 | N | 17 |
| A 294 | 3 | P3-48 | 19 | N | 18 | P5-43 | 19 | N | 17 |
| A 296 |  | P3-60 | 19 | N | 17 | P6-17 | 19 | N | 17 |
| A 297 | 3 | P5-17 | 19 | N | 17 | S10SW2-NO | 25 | Y |  |
| A 298 | 1 |  |  |  | A 10 |  |  |  | A 9 |
|  |  |  |  |  |  |  |  |  | 7 8 |
| A 298B | 4 | E27 | 25 | N | 13 19 | SHLD A298 | 25 | N |  |
| A 298L |  | P5-10 | 19 | N | 17 | P6-20 | 19 | N | 17 |
| A 298R |  | P5-56 | 19 | N | 17 | P6-18 | 19 | N | 17 |
| A 299 | 2 |  |  |  | 11 |  |  |  | 5 6 10 |
| A 299B | 4 | E28 | 25 | N |  | SHLD A299 | 25 | N |  |
| A 299W |  | P5-65 | 19 | N | 17 | XF2- 2 | 25 | Y |  |
| A 300 | 1 |  |  |  | A 9 |  |  |  | A 10 |
|  |  |  |  |  | 7 8 |  |  |  |  |
| A 300A | 4 | SHLD A300 | 25 | N |  | E27 | 25 | N |  |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

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MIL 2085 - 4-63 WIR

INCHES

0 1 2

PHOTOGRAPHIC SCALE ONLY

GBS WIRING HARNESS A F 1900096

| CONDUCTOR | INDIVIDUAL LENGTH | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2▷ | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | 2▷ | T I N | TERMINATION SPEC. 1▷ ITEM NO. | NO. | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | 2▷ | T I N | TERMINATION SPEC 1▷ ITEM NO. | NO. |
| A 317 | 3 | | P7- 4 | 19 | N | 18 | | S6A- 5A | 25 | Y | | |
| A 318 | 3 | | P7- 5 | 19 | N | 18 | | S6A- 6A | 25 | Y | | |
| A 319 | 3 | | P7- 6 | 19 | N | 18 | | S6A- 7A | 25 | Y | | |
| A 320 | 3 | | P7- 7 | 19 | N | 18 | | S6A- 8A | 25 | Y | | |
| A 321 | 3 | | P7- 8 | 19 | N | 18 | | S6A- 9A | 25 | Y | | |
| A 322 | 3 | | P7- 9 | 19 | N | 18 | | S6A-10A | 25 | Y | | |
| A 323 | 3 | | P7-29 | 19 | N | 17 | | S7A-10A | 25 | Y | | |
| A 324 | 3 | | P7-30 | 19 | N | 17 | | S7A- 9A | 25 | Y | | |
| A 325 | 3 | | P7-31 | 19 | N | 17 | | S7A- 8A | 25 | Y | | |
| A 326 | 3 | | P7-32 | 19 | N | 17 | | S7A- 7A | 25 | Y | | |
| A 327 | 3 | | P7-33 | 19 | N | 17 | | S7A- 6A | 25 | Y | | |
| A 328 | 3 | | P7-34 | 19 | N | 17 | | S7A- 5A | 25 | Y | | |
| A 329 | 3 | | P7-35 | 19 | N | 17 | | S7A- 4A | 25 | Y | | |
| A 330 | 3 | | P7-36 | 19 | N | 17 | | S7A- 3A | 25 | Y | | |
| A 331 | 3 | | P7-37 | 19 | N | 17 | | S7A- 2A | 25 | Y | | |
| A 332 | 1 | | | | | A 10 | | | | | A 9 | |
| | | | | | | | | | | | 7 8 | |
| A 332B | 4 | | E28 | 25 | N | 13 19 | | SHLD A332 | 25 | N | | |

1▷ THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2▷ DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
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SCALE-NONE REV LTR F SHEET 42 OF 47

MIL 2085 - 4-63 WIR

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GBS WIRING HARNESS A F 1900096

| CONDUCTOR | INDIVIDUAL LENGTH | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2▷ | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | 2▷ | T I N | TERMINATION SPEC. 1▷ ITEM NO. | NO. | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | 2▷ | T I N | TERMINATION SPEC 1▷ ITEM NO. | NO. |
| A 332L | | | S1A- 1B | 25 | Y | | | S2B- 1B | 25 | Y | | |
| A 332R | | | S1A- 1A | 25 | Y | | | S2B- 1A | 25 | Y | | |
| A 333 | 1 | | | | | A 10 | | | | | A 9 | |
| | | | | | | | | | | | 7 8 | |
| A 333A | 4 | | E28 | 25 | N | | | SHLD A333 | 25 | N | | |
| A 333L | | | S1A- 3B | 25 | Y | | | S2B- 3B | 25 | Y | | |
| A 333R | | | S1A- 3A | 25 | Y | | | S2B- 3A | 25 | Y | | |
| A 334 | 3 | | S2A- 5A | | | | | S10SW2-C | 25 | Y | | |
| A 335 | 1 | | | | | A 9 | | | | | A 10 | |
| | | | | | | 7 8 | | | | | | |
| A 335A | 4 | | SHLD A335 | 25 | N | | | E28 | 25 | N | | |
| A 335L | | | S2B- 1B | 25 | Y | | | S8A- 1B | 25 | Y | | |
| A 335R | | | S2B- 1A | 25 | Y | | | S8A- 1A | 25 | Y | | |
| A 336 | 1 | | | | | A 9 | | | | | A 10 | |
| | | | | | | 7 8 | | | | | | |
| A 336A | 4 | | SHLD A336 | 25 | N | | | E28 | 25 | N | | |
| A 336L | | | S2B- 3B | 25 | Y | | | S8A- 3B | 25 | Y | | |
| A 336R | | | S2B- 3A | 25 | Y | | | S8A- 3A | 25 | Y | | |

1▷ THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2▷ DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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HOUSTON, TEXAS

SIZE A 1900096

SCALE-NONE REV LTR F SHEET 43 OF 47

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GBS WIRING HARNESS A F 1900096

| CONDUCTOR | INDIVIDUAL LENGTH | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2▷ | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | 2▷ | T I N | TERMINATION SPEC. 1▷ ITEM NO. | NO. | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | 2▷ | T I N | TERMINATION SPEC 1▷ ITEM NO. | NO. |
| A 300L | | | P6-12 | 19 | N | 17 | | S3A-11B | 25 | Y | | |
| A 300R | | | P6-11 | 19 | N | 17 | | S3A-11A | 25 | Y | | |
| A 301 | 3 | | P6-15 | 19 | N | 17 | | S10SW1-NO | 25 | Y | | |
| A 302 | 3 | | P6-22 | 19 | N | 17 | | S13SW3-NO | 25 | Y | | |
| A 303 | 3 | | P6-23 | 19 | N | 17 | | S12SW1-NO | 25 | Y | | |
| A 304 | 3 | | P6-24 | 19 | N | 17 | | S12SW1-NC | 25 | Y | | |
| A 305 | 3 | | P6-25 | 19 | N | 17 | | S12SW1-C | 25 | Y | | |
| A 306 | 3 | | P6-26 | 19 | N | 17 | | XDS6-A | 25 | Y | | |
| A 307 | 3 | | P6-27 | 19 | N | 17 | | S9SW1-NC | 25 | Y | | |
| A 308 | 3 | | P6-28 | 19 | N | 18 | | S9SW1-C | 25 | Y | | |
| A 309 | 3 | | P6-46 | 19 | N | 18 | | S10SW2-C | 25 | Y | | |
| A 310 | 3 | | P6-47 | 19 | N | 17 | | S2A-5B | 25 | Y | | |
| A 311 | 3 | | P6-51 | 19 | N | 17 | | S7A-11A | 25 | Y | | |
| A 312 | 3 | | P6-53 | 19 | N | 17 | | S6A-11A | 25 | Y | | |
| A 313 | 3 | | P6-58 | 19 | N | 17 | | S5SW1-NC | 25 | Y | | |
| A 314 | 3 | | P7- 1 | 19 | N | 18 | | S6A- 2A | 25 | Y | | |
| A 315 | 3 | | P7- 2 | 19 | N | 18 | | S6A- 3A | 25 | Y | | |
| A 316 | 3 | | P7- 3 | 19 | N | 18 | | S6A- 4A | 25 | Y | | |

1▷ THE STD CONDUCTOR TERMINATION FIGURES ARE PER

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GBS WIRING HARNESS A F 1900096

| CONDUCTOR | INDIVIDUAL LENGTH | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2▷ | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | 2▷ | T I N | TERMINATION SPEC. 1▷ ITEM NO. | NO. | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | 2▷ | T I N | TERMINATION SPEC 1▷ ITEM NO. | NO. |
| A 337 | 3 | | S4SW1-C | 25 | Y | | | S4SW2-C | 25 | Y | | |
| A 338 | 3 | | S4SW1-C | 25 | Y | | | S13SW1-C | 25 | Y | | |
| A 339 | 3 | | S4SW1-NO | 25 | Y | | | XDS2-A | 25 | Y | | |
| A 340 | 3 | | S4SW2-NO | 25 | Y | | | S5SW1-C | 25 | Y | | |
| A 341 | 3 | | S5SW1-C | 25 | Y | | | S5SW2-C | 25 | Y | | |
| A 342 | 3 | | S5SW2-NC | 25 | Y | | | XDS3-A | 25 | Y | | |
| A 343 | 3 | | S6A- 1A | 25 | Y | | | XDS1- 1A | 25 | Y | | |
| A 344 | 3 | | S6A- 2A | 25 | Y | | | XDS1- 2A | 25 | Y | | |
| A 345 | 3 | | S6A- 3A | 25 | Y | | | XDS1- 3A | 25 | Y | | |
| A 346 | 3 | | S6A- 4A | 25 | Y | | | XDS1- 4A | 25 | Y | | |
| A 347 | 3 | | S6A- 5A | 25 | Y | | | XDS1- 5A | 25 | Y | | |
| A 348 | 3 | | S6A- 6A | 25 | Y | | | XDS1- 6A | 25 | Y | | |
| A 349 | 3 | | S6A- 7A | 25 | Y | | | XDS1- 7A | 25 | Y | | |
| A 350 | 3 | | S6A- 8A | 25 | Y | | | XDS1- 8A | 25 | Y | | |
| A 351 | 3 | | S6A- 9A | 25 | Y | | | XDS1- 9A | 25 | Y | | |
| A 352 | 3 | | S6A-10A | 25 | Y | | | XDS1-10A | 25 | Y | | |
| A 353 | 3 | | S7A- 1A | 25 | Y | | | XDS1- 1B | 25 | Y | | |
| A 354 | 3 | | S7A- 2A | 25 | Y | | | XDS1- 2B | 25 | Y | | |

1▷ THE STD CONDUCTOR TERMINATION FIGURES ARE PER

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INCHES
0 1 2
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GBS WIRING HARNESS A F 1900096

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | 2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 355 | 3 | | S7A- 3A | 25 | Y | | | XDS1- 3B | 25 | Y | | |
| A 356 | 3 | | S7A- 4A | 25 | Y | | | XDS1- 4B | 25 | Y | | |
| A 357 | 3 | | S7A- 5A | 25 | Y | | | XDS1- 5B | 25 | Y | | |
| A 358 | 3 | | S7A- 6A | 25 | Y | | | XDS1- 6B | 25 | Y | | |
| A 359 | 3 | | S7A- 7A | 25 | Y | | | XDS1- 7B | 25 | Y | | |
| A 360 | 3 | | S7A- 8A | 25 | Y | | | XDS1- 8B | 25 | Y | | |
| A 361 | 3 | | S7A- 9A | 25 | Y | | | XDS1- 9B | 25 | Y | | |
| A 362 | 3 | | S7A-10A | 25 | Y | | | XDS1-10B | 25 | Y | | |
| A 363 | 3 | | S9SW2-C | 25 | Y | | | S4SW2-C | 25 | Y | | |
| A 364 | 3 | | S9SW2-C | 25 | Y | | | S10SW1-C | 25 | Y | | |
| A 365 | 3 | | S9SW2-NO | 25 | Y | | | S12SW1-C | 25 | Y | | |
| A 366 | 3 | | S9SW2-NO | 25 | Y | | | XDS4-A | 25 | Y | | |
| A 367 | 3 | | S10SW1-C | 25 | Y | | | S11- 6A | 25 | Y | | |
| A 368 | 3 | | S10SW1-NO | 25 | Y | | | XDS5-A | 25 | Y | | |
| A 369 | 3 | | S10SW1-NC | 25 | Y | | | XDS5-B | 25 | Y | | |
| A 370 | 3 | | S13SW1-C | 25 | Y | | | XF1- 2 | 25 | Y | | |
| A 371 | 3 | | S13SW1-NO | 25 | Y | | | XDS7-A | 25 | Y | | |
| A 372 | 3 | | S13SW2-C | 25 | Y | | | S13SW3-C | 25 | Y | | |

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GBS WIRING HARNESS A 1900096

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | 2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 373 | 3 | | S13SW3-C | 25 | Y | | | XDS7-G | 25 | Y | | |
| A 374 | 3 | | XDS1-G | 25 | Y | 20 | | XDS2-G | 25 | Y | | |
| A 375 | 3 | | XDS1-G | 25 | Y | | | XDS5-G | 25 | Y | | |
| A 376 | 3 | | XDS2-A | 25 | Y | | | XDS2-C | 25 | Y | | |
| A 377 | 3 | | XDS2-G | 25 | Y | | | XDS3-G | 25 | Y | | |
| A 378 | 3 | | XDS3-A | 25 | Y | | | XDS3-C | 25 | Y | | |
| A 379 | 3 | | XDS3-G | 25 | Y | | | XDS4-G | 25 | Y | | |
| A 380 | 3 | | XDS4-A | 25 | Y | | | XDS4-C | 25 | Y | | |
| A 381 | 3 | | XDS4-G | 25 | Y | | | XDS6-G | 25 | Y | | |
| A 382 | 3 | | XDS5-A | 25 | Y | | | XDS5-D | 25 | Y | | |
| A 383 | 3 | | XDS5-B | 25 | Y | | | XDS5-C | 25 | Y | | |
| A 384 | 3 | | XDS5-G | 25 | Y | | | XDS7-G | 25 | Y | | |
| A 385 | 3 | | XDS6-A | 25 | Y | | | XDS6-C | 25 | Y | | |
| A 386 | 3 | | XDS6-G | 25 | Y | | | P6-57 | 19 | N | 18 | |
| A 387 | 3 | | XDS7-A | 25 | Y | | | XDS7-C | 25 | Y | | |
| A 388 | 4 | | E3 | 25 | N | | | E2 | 25 | N | | |
| A 389 | 4 | | E4 | 25 | N | | | E2 | 25 | N | | |
| A 390 | 4 | | E5 | 25 | N | | | E2 | 25 | N | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

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INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

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| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | 2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 412 | 4 | | E27 | 25 | N | | | E2 | 25 | N | | |
| A 413 | 4 | | E28 | 25 | N | | | E2 | 25 | N | | |
| A 418 | 4 | | P6-59 | 19 | N | | | E27 | 25 | N | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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SCALE-NONE | REV LTR F | SHEET 47 OF 47

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| APPLICATION | | REVISIONS | | | |
|---|---|---|---|---|---|
| NEXT ASSY | USED ON | SYM | DESCRIPTION | DATE | APPROV |
| 1900057-011 | 1900057-011 | F | REPLACES REV. E WITH CHANGE PER MXC-191010<br>REVISED PER TDR 04419 | 15 OCT 63<br>5 NOV 63 | SD MET<br>WK |
| | | G | REPLACED WITH CHANGE BY REV. H PER MXC 191409<br>PER TDRR 01869 | 18 NOV 63<br>5 DEC 63 | TP |

**FOR INFORMATION ONLY**
CLASS B RELEASE TDR No. 01801 DATE 2 July 63

Ⓖ REPLACED WITH CHANGE BY REV H
Ⓕ

**REPLACES REV E WITH CHANGE**

| REV | | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SHEET | | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | | |
| REV STATUS | REV | G | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F | F |
| OF SHEETS | SHEET | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | | | |

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN R.W. HEISEL DATE 17 JUN 63
CHECKED W. DIEHL 17 JUN 63
APPROVAL W Fairbay 19 OCT 63
APPROVAL C Jediman Nov 4, 1963
APPROVAL Bernard
APPROVAL W Lyfer 5 Nov 63
CONTRACT NAS9-497

MANNED
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HOUSTON, TEXAS

WIRING HARNESS "A"

CODE IDENT NO. | SIZE A | 1900096 | REV G
SCALE — | SHEET 1 OF 47

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## REVISION STATUS OF SHEETS

| SH | REV | SH | REV | SH | REV | SH | REV | SH | REV | SH | REV | SH | REV | SH | REV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

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REVISION F

NASA DRAWING NO. 1900096
SHEET 2 OF 47

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PENNANT NOTE

GENERAL NOTES

INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327

MARK CONDUCTOR IDENTIFICATION PER ND . (ES-2469)

MARK CONDUCTOR IDENTIFICATION OMITTING ALL SUFFIX LETTERS EXCEPT A AND B PER ND .

Y OR N IN TINNED COLUMN INDICATES YES OR NO.

A LETTER WITH AN ASTERISK SUFFIX, INDICATES A LOWER CASE LETTER.

3 VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.

THE SUFFIX LETTER OF A CONDUCTOR IDENTIFICATION NUMBER INDICATES CONDUCTOR SHIELDING OR CONDUCTOR COLOR.
A - FROM END SHIELD
B - TO END SHIELD
E - GRAY
L - WHITE WITH BLUE TRACER
R - WHITE WITH RED TRACER
X - COAX OUTER CONDUCTOR

BIND WIRES TOGETHER USING ND . FORM S OR Y LOCKSTITCH AT 1/2 INCH SPACING.

SPACING OF CONDUCTOR IDENTIFICATION SHALL BE EVERY 1.2 INCHES.

SPIRALLING OF THE MARKINGS IS ALLOWED.

IDENTIFY USING PART NO. AND REVISION LETTER PER MIL-STD-130 (ES-267).

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PENNANT NOTE

GENERAL NOTES

MARK SLEEVING ITEM NUMBERS FOLLOWING AN A OR T IN THE ACCESSORIES ITEM NUMBER FIELD WITH CONDUCTOR NUMBER PER CONDUCTOR CHART PER ND . (ES-2872, CLASS 1) COLOR BLACK, 1/8 HIGH

MARK SLEEVE ON ALL E POINTS WITH E POINT NUMBER PER CONDUCTOR CHART PER ND (ES-2872, CLASS 1) COLOR BLACK, 1/8 INCH HIGH.

SOLDER PER MIL-S-6872 USING ITEMS 31 AND 32

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INCHES
0 1 2
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WIRING HARNESS A F 1900096

LIST OF MATERIALS

| PENNANT NOTE | ITEM | QTY | PART NO | DESCRIPTION |
|---|---|---|---|---|
| | 18 | 242 | 1015818-420 | CONNECTOR SOCKET CONTACTS |
| | 19 | 6 | 1010490-258 | INSULATION SLEEVING, ELECTRICAL (HEAT SHRINK) |
| | 20 | 2 | 1015902- 46 | TERMINAL LUG |
| | 21 | 1 | MS3127E-24-61P | CONNECTOR, RECEP ELEC |
| | 22 | 1 | MS3127E-24-61PW | CONNECTOR, RECEP ELEC |
| | 23 | 1 | MS3127E-24-61PX | CONNECTOR, RECEP ELEC |
| | 24 | 6 | 1015818-660 | CONNECTOR, PLUG ELEC |
| | 25 | 2 | 1015867-660 | CONNECTOR, RECEP ELEC |
| | 26 | 2 | 1015906-100 | CONNECTOR, RECEP ELEC |
| | 27 | 2 | 1015906-101 | CONNECTOR, RECEP ELEC |
| | 28 | 1 | 1015906-102 | CONNECTOR, RECEP ELEC |
| | 29 | 1 | 1900096-005 | WIRE-COAX MIL-C-17/69A RG188A/U 173 FT TOTAL LG |
| | 30 | 58 | 1010490-202 | INSULATION SLEEVING, ELECTRICAL (HEAT SHRINK) |
| | 31 | AR | QQ-S-571 | SOLDER SN60 (ES-2175 ALLOY 1) |
| | 32 | AR | QQ-S-571 | FLUX TYPE AR (ES-2175 TYPE 1 OR 2) OR MIL-F-14256 FLUX (ES-2798) |
| | 33 | 1 | 1015906-103 | CONNECTOR, RECEP. ELEC. |
| | 34 | 1 | 1015906-104 | CONNECTOR, RECEP. ELEC. |

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| CONDUCTOR INDIVIDUAL LENGTH | | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 1 | 4 | | J1-A | 19 | N | | | E1 | 25 | | 20 | |
| A 2 | 3 | | J1-B | 19 | N | | | P6-56 | 19 | N | 17 | |
| A 3 | 3 | | J1-C | 19 | N | | | P6-54 | 19 | N | 17 | |
| A 4 | 3 | | J1-D | 19 | N | | | P6-55 | 19 | N | 17 | |
| A 5 | 3 | | J1-E | 19 | N | | | S6A- 1A | 25 | Y | | |
| A 6 | 3 | | J1-F | 19 | N | | | P7- 1 | 19 | N | 18 | |
| A 7 | 3 | | J1-G | 19 | N | | | P7- 2 | 19 | N | 18 | |
| A 8 | 3 | | J1-H | 19 | N | | | P7- 3 | 19 | N | 18 | |
| A 9 | 3 | | J1-J | 19 | N | | | P7- 4 | 19 | N | 18 | |
| A 10 | 3 | | J1-K | 19 | N | | | P7- 5 | 19 | N | 18 | |
| A 11 | 3 | | J1-L | 19 | N | | | P7- 6 | 19 | N | 18 | |
| A 12 | 3 | | J1-M | 19 | N | | | P7- 7 | 19 | N | 18 | |
| A 13 | 3 | | J1-N | 19 | N | | | P7- 8 | 19 | N | 18 | |
| A 14 | 3 | | J1-P | 19 | N | | | P7- 9 | 19 | N | 18 | |
| A 15 | 3 | | J1-R | 19 | N | | | P7-11 | 19 | N | 17 | |
| A 16 | 3 | | J1-S | 19 | N | | | P7-12 | 19 | N | 17 | |
| A 17 | 3 | | J1-T | 19 | N | | | P7-13 | 19 | N | 17 | |
| A 18 | 3 | | J1-U | 19 | N | | | P7-14 | 19 | N | 17 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

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LIST OF MATERIALS

| PENNANT NOTE | ITEM | QTY | PART NO | DESCRIPTION |
|---|---|---|---|---|
| | 1 | 1 | 1900096-004 | WIRE ND1002181 CLASS 4 TYPE 2 24AWG (WHT/RED, WHT/BLU) 73 FT TOTAL LENGTH |
| | 2 | 1 | 1900096-003 | WIRE ND1002181 CLASS 4 TYPE 1 24AWG (WHITE) 3 FT TOTAL LENGTH |
| | 3 | 1 | 1900096-002 | WIRE ND1002181 CLASS 1 TYPE 1 24AWG (WHITE) 668 FT TOTAL LENGTH |
| | 4 | 1 | 1900096-001 | WIRE ND1002181 CLASS 1 TYPE 1 22AWG (WHITE) 228 FT TOTAL LENGTH |
| | 5 | 59 | 1000243-003 | FERRULE, ELECTRICAL CONDUCTOR INNER |
| | 6 | 59 | 1000242-004 | FERRULE, ELECTRICAL CONDUCTOR OUTER |
| | 7 | 24 | 1000243-008 | FERRULE, ELECTRICAL CONDUCTOR INNER |
| | 8 | 24 | 1000242-008 | FERRULE, ELECTRICAL CONDUCTOR OUTER |
| | 9 | 24 | 1010490-196 | INSULATION SLEEVING, ELECTRICAL (HEAT SHRINK) |
| | 10 | 69 | 1010490-198 | INSULATION SLEEVING, ELECTRICAL (HEAT SHRINK) |
| | 11 | 1 | 1010490-200 | INSULATION SLEEVING, ELECTRICAL (HEAT SHRINK) |
| | 13 | 6 | 1016006-002 | SPLICE REDUCER, PERMANENT, CRIMP STYLE, COPPER |
| | 14 | 58 | 1015908- 21 | COAXIAL, SOCKET CONTACT |
| | 15 | 58 | 1015908- 41 | COAXIAL, OUTER MALE BODY |
| | 16 | 58 | 1015908- 51 | COAXIAL, HYRING |
| | 17 | 223 | 1015818-424 | CONNECTOR SOCKET CONTACTS |

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| CONDUCTOR INDIVIDUAL LENGTH | | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 19 | 3 | | J1-V | 19 | N | | | P7-15 | 19 | N | 17 | |
| A 20 | 3 | | J1-W | 19 | N | | | P7-16 | 19 | N | 17 | |
| A 21 | 3 | | J1-X | 19 | N | | | P7-17 | 19 | N | 17 | |
| A 22 | 3 | | J1-Y | 19 | N | | | P7-18 | 19 | N | 17 | |
| A 23 | 3 | | J1-Z | 19 | N | | | P7-19 | 19 | N | 17 | |
| A 24 | 3 | | J1-A* | 19 | N | | | P7-20 | 19 | N | 17 | |
| A 25 | 3 | | J1-B* | 19 | N | | | P7-21 | 19 | N | 17 | |
| A 26 | 3 | | J1-C* | 19 | N | | | P7-22 | 19 | N | 17 | |
| A 27 | 3 | | J1-D* | 19 | N | | | P7-23 | 19 | N | 17 | |
| A 28 | 3 | | J1-E* | 19 | N | | | P7-24 | 19 | N | 17 | |
| A 29 | 3 | | J1-F* | 19 | N | | | P7-25 | 19 | N | 17 | |
| A 30 | 3 | | J1-G* | 19 | N | | | P7-26 | 19 | N | 17 | |
| A 31 | 3 | | J1-H* | 19 | N | | | P7-27 | 19 | N | 17 | |
| A 32 | 3 | | J1-I* | 19 | N | | | P7-28 | 19 | N | 17 | |
| A 33 | 3 | | J1-J* | 19 | N | | | P7-29 | 19 | N | 18 | |
| A 34 | 3 | | J1-K* | 19 | N | | | P7-30 | 19 | N | 18 | |
| A 35 | 3 | | J1-M* | 19 | N | | | P7-31 | 19 | N | 18 | |
| A 36 | 3 | | J1-N* | 19 | N | | | P7-32 | 19 | N | 18 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1900096
SCALE-NONE
REV LTR F
SHEET 8 OF 47

MIL 2085 - 4-63 WIR

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

GBS WIRING HARNESS A F 1900096

| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 51 | 3 | | J2-B | 19 | N | | | P2-61 | 19 | N | 18 | |
| A 52 | 3 | | J2-C | 19 | N | | | P2-62 | 19 | N | 18 | |
| A 53 | 3 | | J2-D | 19 | N | | | P2-52 | 19 | N | 18 | |
| A 54 | 3 | | J2-E | 19 | N | | | P2-53 | 19 | N | 18 | |
| A 55 | 3 | | J2-F | 19 | N | | | P2-54 | 19 | N | 18 | |
| A 56 | 3 | | J2-G | 19 | N | | | P2-55 | 19 | N | 18 | |
| A 57 | 3 | | J2-H | 19 | N | | | P2-56 | 19 | N | 18 | |
| A 58 | 3 | | J2-J | 19 | N | | | P2-57 | 19 | N | 18 | |
| A 59 | 3 | | J2-K | 19 | N | | | P2-58 | 19 | N | 18 | |
| A 60 | 3 | | J2-L | 19 | N | | | P2-59 | 19 | N | 18 | |
| A 61 | 3 | | J2-M | 19 | N | | | P2-60 | 19 | N | 18 | |
| A 62 | 3 | | J2-N | 19 | N | | | J12-15 | 19 | N | 17 | |
| A 63 | 3 | | J2-P | 19 | N | | | J12-10 | 19 | N | 18 | |
| A 64 | 3 | | J2-R | 19 | N | | | P2-63 | 19 | N | 18 | |
| A 65 | 3 | | J2-S | 19 | N | | | XF1- 1 | 25 | Y | | |
| A 66 | 3 | | J2-T | 19 | N | | | P6-57 | 19 | N | 17 | |
| A 67 | 3 | | J2-U | 19 | N | | | J12-29 | 19 | N | 18 | |
| A 68 | 3 | | J2-V | 19 | N | | | J12-28 | 19 | N | 18 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE-NONE | REV LTR F | SHEET 10 OF 47

MIL 2085 · 4-63 WIR

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GBS WIRING HARNESS A F 1900096

| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 69 | 3 | | J2-W | 19 | N | | | J12-27 | 19 | N | 18 | |
| A 70 | 3 | | J2-X | 19 | N | | | J12-26 | 19 | N | 18 | |
| A 71 | 3 | | J2-Y | 19 | N | | | J12-16 | 19 | N | 18 | |
| A 72 | 3 | | J2-Z | 19 | N | | | J12-17 | 19 | N | 18 | |
| A 73 | 3 | | J2-A* | 19 | N | | | J12-18 | 19 | N | 18 | |
| A 74 | 3 | | J2-B* | 19 | N | | | J12-19 | 19 | N | 18 | |
| A 75 | 3 | | J2-C* | 19 | N | | | J12-20 | 19 | N | 18 | |
| A 76 | 3 | | J2-D* | 19 | N | | | J12-21 | 19 | N | 18 | |
| A 77 | 3 | | J2-E* | 19 | N | | | J12-22 | 19 | N | 18 | |
| A 78 | 3 | | J2-F* | 19 | N | | | J12-23 | 19 | N | 18 | |
| A 79 | 3 | | J2-G* | 19 | N | | | J12-24 | 19 | N | 18 | |
| A 80 | 3 | | J2-H* | 19 | N | | | J12-30 | 19 | N | 18 | |
| A 81 | 3 | | J2-I* | 19 | N | | | J12-25 | 19 | N | 17 | |
| A 82 | 3 | | J2-M* | 19 | N | | | P6-32 | 19 | N | 17 | |
| A 83 | 3 | | J2-N* | 19 | N | | | P6-33 | 19 | N | 17 | |
| A 84 | 3 | | J2-P* | 19 | N | | | P6-34 | 19 | N | 17 | |
| A 85 | 3 | | J2-Q* | 19 | N | | | P6-35 | 19 | N | 17 | |
| A 86 | 3 | | J2-R* | 19 | N | | | P6-36 | 19 | N | 17 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE-NONE | REV LTR F | SHEET 11 OF 47

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GBS WIRING HARNESS A F 1900096

| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 37 | 3 | | J1-P* | 19 | N | | | P7-33 | 19 | N | 18 | |
| A 38 | 3 | | J1-Q* | 19 | N | | | P7-34 | 19 | N | 18 | |
| A 39 | 3 | | J1-R* | 19 | N | | | P7-35 | 19 | N | 18 | |
| A 40 | 3 | | J1-S* | 19 | N | | | P7-36 | 19 | N | 18 | |
| A 41 | 3 | | J1-T* | 19 | N | | | P7-37 | 19 | N | 18 | |
| A 42 | 3 | | J1-U* | 19 | N | | | S7A- 1A | 25 | Y | | |
| A 43 | 3 | | J1-V* | 19 | N | | | P6-52 | 19 | N | 17 | |
| A 44 | 3 | | J1-W* | 19 | N | | | S11A- 1A | 25 | Y | | |
| A 45 | 3 | | J1-X* | 19 | N | | | S11A- 3A | 25 | Y | | |
| A 46 | 3 | | J1-Y* | 19 | N | | | S11A- 5A | 25 | Y | | |
| A 47 | 3 | | J1-BB | 19 | N | | | P6-48 | 19 | N | 17 | |
| A 48 | 3 | | J1-AA | 19 | N | | | P6-49 | 19 | N | 17 | |
| A 49 | 3 | | J1-Z* | 19 | N | | | P6-50 | 19 | N | 17 | |
| A 50 | 1 | | | | | A 9 | | | | | A 10 | |
| | | | | | | 7 8 | | | | | | |
| A 50A | 4 | | SHLD A50 | 25 | N | | | E27 | 25 | N | | |
| A 50L | | | J1-CC | 19 | N | | | P6-16 | 19 | N | 17 | |
| A 50R | | | J1-DD | 19 | N | | | P6-21 | 19 | N | 17 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE-NONE | REV LTR F | SHEET 9 OF 47

MIL 2085 · 4-63 WIR

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GBS WIRING HARNESS A F 1900096

| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 87 | 3 | | J2-S* | 19 | N | | | P6-37 | 19 | N | 17 | |
| A 88 | 3 | | J2-T* | 19 | N | | | P6-38 | 19 | N | 17 | |
| A 89 | 3 | | J2-U* | 19 | N | | | P6-39 | 19 | N | 17 | |
| A 90 | 3 | | J2-V* | 19 | N | | | P6-40 | 19 | N | 17 | |
| A 91 | 3 | | J2-W* | 19 | N | | | P6-41 | 19 | N | 17 | |
| A 92 | 3 | | J2-X* | 19 | N | | | P6-42 | 19 | N | 17 | |
| A 93 | 3 | | J2-Y* | 19 | N | | | P6-43 | 19 | N | 17 | |
| A 94 | 3 | | J2-Z* | 19 | N | | | P6-44 | 19 | N | 17 | |
| A 95 | 3 | | J2-AA | 19 | N | | | P6-45 | 19 | N | 17 | |
| A 96 | 3 | | J2-BB | 19 | N | | | P6-29 | 19 | N | 17 | |
| A 97 | 3 | | J2-CC | 19 | N | | | P6-28 | 19 | N | 17 | |
| A 98 | 3 | | J2-EE | 19 | N | | | P6-31 | 19 | N | 17 | |
| A 99 | 3 | | J2-FF | 19 | N | | | P6-30 | 19 | N | 17 | |
| A 100 | 3 | | J2-GG | 19 | N | | | S13SW2-NO | 25 | Y | | |
| A 101 | 3 | | J2-GG | 19 | N | | | J2-HH | 19 | N | | |
| A 102 | 4 | | J3-A | 19 | N | | | E2 | 25 | N | 13 19 | |
| A 103 | 1 | | | | | A 9 | | | | | A 10 | |
| | | | | | | 7 8 | | | | | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE-NONE | REV LTR F | SHEET 12 OF 47

MIL 2085 · 4-63 WIR

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | ▷2 | T I N | FROM TERMINATION ITEM NO. | TO CIRCUIT POINT | ▷2 | T I N | TO TERMINATION ITEM NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 107 | 1 | | | | A 9 | | | | A 10 |
| | | | | | 7 8 | | | | |
| A 107A | 4 | SHLD A107 | 25 | N | | E3 | 25 | N | |
| A 107L | | J3-F* | 19 | N | | S3A- 3B | 25 | Y | |
| A 107R | | J3-F | 19 | N | | S3A- 3A | 25 | Y | |
| A 108 | 1 | | | | A 9 | | | | A 10 |
| | | | | | 7 8 | | | | |
| A 108A | 4 | SHLD A108 | 25 | N | | E3 | 25 | N | |
| A 108L | | J3-G* | 19 | N | | S3A- 2B | 25 | Y | |
| A 108R | | J3-G | 19 | N | | S3A- 2A | 25 | Y | |
| A 109 | 1 | | | | A 9 | | | | A 10 |
| | | | | | 7 8 | | | | |
| A 109A | 4 | SHLD A109 | 25 | N | | E4 | 25 | N | 13 19 |
| A 109L | | J3-H* | 19 | N | | P6-14 | 19 | N | 17 |
| A 109R | | J3-H | 19 | N | | P6-13 | 19 | N | 17 |
| A 110 | 1 | | | | A 9 | | | | A 10 |
| | | | | | 7 8 | | | | |
| A 110A | 4 | SHLD A110 | 25 | N | | E4 | 25 | N | |

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE-NONE | REV LTR F | SHEET 14 OF 47

MIL 2085 - 4-63 WIR

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| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | ▷2 | T I N | FROM TERMINATION ITEM NO. | TO CIRCUIT POINT | ▷2 | T I N | TO TERMINATION ITEM NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 110L | | J3-J* | 19 | N | | S1A- 6B | 25 | Y | |
| A 110R | | J3-J | 19 | N | | S1A- 6A | 25 | Y | |
| A 111 | 1 | | | | A 9 | | | | A 10 |
| | | | | | 7 8 | | | | |
| A 111A | 4 | SHLD A111 | 25 | N | | E4 | 25 | N | |
| A 111L | | J3-K* | 19 | N | | S2B- 5B | 25 | Y | |
| A 111R | | J3-K | 19 | N | | S2B- 5A | 25 | Y | |
| A 112 | 1 | | | | A 9 | | | | A 10 |
| | | | | | 7 8 | | | | |
| A 112A | 4 | SHLD A112 | 25 | N | | E4 | 25 | N | |
| A 112L | | J3-M* | 19 | N | | S8A- 6B | 25 | Y | |
| A 112R | | J3-M | 19 | N | | S8A- 5A | 25 | Y | |
| A 113 | 1 | | | | A 9 | | | | A 10 |
| | | | | | 7 8 | | | | |
| A 113A | 4 | SHLD A113 | 25 | N | | E4 | 25 | N | |
| A 113L | | J3-N* | 19 | N | | S1A- 1B | 25 | Y | |
| A 113R | | J3-N | 19 | N | | S1A- 1A | 25 | Y | |
| A 114 | 1 | | | | A 9 | | | | A 10 |

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE-NONE | REV LTR F | SHEET 15 OF 47

MIL 2085 - 4-63 WIR

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| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | ▷2 | T I N | FROM TERMINATION ITEM NO. | TO CIRCUIT POINT | ▷2 | T I N | TO TERMINATION ITEM NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 103A | 4 | SHLD A103 | 25 | N | | E3 | 25 | N | 13 19 |
| A 103L | | J3-B* | 19 | N | | S3A- 7B | 25 | Y | |
| A 103R | | J3-B | 19 | N | | S3A- 7A | 25 | Y | |
| A 104 | 1 | | | | A 9 | | | | A 10 |
| | | | | | 7 8 | | | | |
| A 104A | 4 | SHLD A104 | 25 | N | | E3 | 25 | N | |
| A 104L | | J3-C* | 19 | N | | S3A- 6B | 25 | Y | |
| A 104R | | J3-C | 19 | N | | S3A- 6A | 25 | Y | |
| A 105 | 1 | | | | A 9 | | | | A 10 |
| | | | | | 7 8 | | | | |
| A 105A | 4 | SHLD A105 | 25 | N | | E3 | 25 | N | |
| A 105L | | J3-D* | 19 | N | | S3A- 5B | 25 | Y | |
| A 105R | | J3-D | 19 | N | | S3A- 5A | 25 | Y | |
| A 106 | 1 | | | | A 9 | | | | A 10 |
| | | | | | 7 8 | | | | |
| A 106A | 4 | SHLD A106 | 25 | N | | E3 | 25 | N | |
| A 106L | | J3-E* | 19 | N | | S3A- 4B | 25 | Y | |
| A 106R | | J3-E | 19 | N | | S3A- 4A | 25 | Y | |

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE-NONE | REV LTR F | SHEET 13 OF 47

MIL 2085 - 4-63 WIR

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| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | ▷2 | T I N | FROM TERMINATION ITEM NO. | TO CIRCUIT POINT | ▷2 | T I N | TO TERMINATION ITEM NO. |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | 7 8 | | | | |
| A 114A | 4 | SHLD A114 | 25 | N | | E5 | 25 | N | 13 19 |
| A 114L | | J3-P* | 19 | N | | S1A- 3B | 25 | Y | |
| A 114R | | J3-P | 19 | N | | S1A- 3A | 25 | Y | |
| A 115 | 1 | | | | A 9 | | | | A 10 |
| | | | | | 7 8 | | | | |
| A 115A | 4 | SHLD A115 | 25 | N | | E5 | 25 | N | |
| A 115L | | J3-R* | 19 | N | | S8A- 4B | 25 | Y | |
| A 115R | | J3-R | 19 | N | | S8A- 4A | 25 | Y | |
| A 116 | 1 | | | | A 9 | | | | A 10 |
| | | | | | 7 8 | | | | |
| A 116A | 4 | SHLD A116 | 25 | N | | E5 | 25 | N | |
| A 116L | | J3-S* | 19 | N | | S2B- 4B | 25 | Y | |
| A 116R | | J3-S | 19 | N | | S2B- 4A | 25 | Y | |
| A 117 | 1 | | | | A 9 | | | | A 10 |
| | | | | | 7 8 | | | | |
| A 117A | 4 | SHLD A117 | 25 | N | | E5 | 25 | N | |
| A 117L | | J3-T* | 19 | N | | S1A- 4B | 25 | Y | |

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE-NONE | REV LTR F | SHEET 16 OF 47

MIL 2085 - 4-63 WIR

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

GBS WIRING HARNESS A F 1900096

| CONDUCTOR | | | FROM | | | | | | TO | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH | | | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | TERMINATION SPEC. 1 | | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | TERMINATION SPEC 1 | |
| NUMBER | ITEM NO. | 2 | CIRCUIT POINT | 2 | T I N | 2 | ITEM NO. | NO. | CIRCUIT POINT | 2 | T I N | 2 | ITEM NO. | NO. |
| A 125B | 3 | | P5-64 | 19 | N | | 18 | | SHLD A125 | 25 | N | | | |
| A 125E | | | J4-B1 | 13 | N | | 14 | | P5-13 | 19 | N | | 18 | |
| A 125X | | | J4-B2 | | | 28 | | | SHLD A125 | | | | | |
| A 126 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 126B | 3 | | P5-62 | 19 | N | | 18 | | SHLD A126 | 25 | N | | | |
| A 126E | | | J4-C1 | 13 | N | | 14 | | P5- 9 | 19 | N | | 18 | |
| A 126X | | | J4-C2 | | | 28 | | | SHLD A126 | | | | | |
| A 127 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 127B | 3 | | P5-58 | 19 | N | | 18 | | SHLD A127 | 25 | N | | | |
| A 127E | | | J4-D1 | 13 | N | | 14 | | P5- 7 | 19 | N | | 18 | |
| A 127X | | | J4-D2 | | | 28 | | | SHLD A127 | | | | | |
| A 128 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 128B | 3 | | P5-60 | 19 | N | | 18 | | SHLD A128 | 25 | N | | | |
| A 128E | | | J4-E1 | 13 | N | | 14 | | P5- 5 | 19 | N | | 18 | |
| A 128X | | | J4-E2 | | | 28 | | | SHLD A128 | | | | | |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A 1900096
SCALE-NONE REV LTR F SHEET 18 OF 47

MIL 2085 - 4-63 WIR

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GBS WIRING HARNESS A F 1900096

| CONDUCTOR | | | FROM | | | | | | TO | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH | | | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | TERMINATION SPEC. 1 | | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | TERMINATION SPEC 1 | |
| NUMBER | ITEM NO. | 2 | CIRCUIT POINT | 2 | T I N | 2 | ITEM NO. | NO. | CIRCUIT POINT | 2 | T I N | 2 | ITEM NO. | NO. |
| A 129 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 129B | 3 | | P5-50 | 19 | N | | 18 | | SHLD A129 | 25 | N | | | |
| A 129E | | | J4-F1 | 13 | N | | 14 | | P5- 3 | 19 | N | | 18 | |
| A 129X | | | J4-F2 | | | 28 | | | SHLD A129 | | | | | |
| A 130 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 130B | 3 | | P5-52 | 19 | N | | 18 | | SHLD A130 | 25 | N | | | |
| A 130E | | | J4-G1 | 13 | N | | 14 | | P5- 1 | 19 | N | | 18 | |
| A 130X | | | J4-G2 | | | 28 | | | SHLD A130 | | | | | |
| A 131 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 131B | 3 | | P5-16 | 19 | N | | 18 | | SHLD A131 | 25 | N | | | |
| A 131E | | | J4-H1 | 13 | N | | 14 | | XF2- 1 | 25 | Y | | | |
| A 131X | | | J4-H2 | | | 28 | | | SHLD A131 | | | | | |
| A 132 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 132B | 3 | | P5-14 | 19 | N | | 18 | | SHLD A132 | 25 | N | | | |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A 1900096
SCALE-NONE REV LTR F SHEET 19 OF 47

MIL 2085 - 4-63 WIR

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GBS WIRING HARNESS A F 1900096

| CONDUCTOR | | | FROM | | | | | | TO | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH | | | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | TERMINATION SPEC. 1 | | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | TERMINATION SPEC 1 | |
| NUMBER | ITEM NO. | 2 | CIRCUIT POINT | 2 | T I N | 2 | ITEM NO. | NO. | CIRCUIT POINT | 2 | T I N | 2 | ITEM NO. | NO. |
| A 117R | | | J3-T | 19 | N | | | | S1A- 4A | 25 | Y | | | |
| A 118 | 1 | | | | | | A 9 | | | | | | A 10 | |
| | | | | | | | 7 8 | | | | | | | |
| A 118A | 4 | | SHLD A118 | 25 | N | | | | E5 | 25 | N | | | |
| A 118L | | | J3-U* | 19 | N | | | | S1A- 5B | 25 | Y | | | |
| A 118R | | | J3-U | 19 | N | | | | S1A- 5A | 25 | Y | | | |
| A 119 | 3 | | J3-AA | 19 | N | | | | S2A- 1A | 25 | Y | | | |
| A 120 | 3 | | J3-BB | 19 | N | | | | S2A- 3A | 25 | Y | | | |
| A 121 | 3 | | J3-CC | 19 | N | | | | S2A- 2A | 25 | Y | | | |
| A 122 | 3 | | J3-DD | 19 | N | | | | S2A- 1B | 25 | Y | | | |
| A 123 | 3 | | J3-EE | 19 | N | | | | S2A- 3B | 25 | Y | | | |
| A 124 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 124B | 3 | | P5-66 | 19 | N | | 18 | | SHLD A124 | 25 | N | | | |
| A 124E | | | J4-A1 | 13 | N | | 14 | | P5-15 | 19 | N | | 18 | |
| A 124X | | | J4-A2 | | | 28 | | | SHLD A124 | | | | | |
| A 125 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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MIL 2085 - 4-63 WIR

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GBS WIRING HARNESS A F 1900096

| CONDUCTOR | | | FROM | | | | | | TO | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH | | | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | TERMINATION SPEC. 1 | | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | TERMINATION SPEC 1 | |
| NUMBER | ITEM NO. | 2 | CIRCUIT POINT | 2 | T I N | 2 | ITEM NO. | NO. | CIRCUIT POINT | 2 | T I N | 2 | ITEM NO. | NO. |
| A 132E | | | J4-J1 | 13 | N | | 14 | | P5-63 | 19 | N | | 18 | |
| A 132X | | | J4-J2 | | | 28 | | | SHLD A132 | | | | | |
| A 133 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 133B | 3 | | P1-62 | 19 | N | | 18 | | SHLD A133 | 25 | N | | | |
| A 133E | | | J5-A1 | 13 | N | | 14 | | P1-25 | 19 | N | | 18 | |
| A 133X | | | J5-A2 | | | 28 | | | SHLD A133 | | | | | |
| A 134 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 134B | 3 | | P1-64 | 19 | N | | 18 | | SHLD A134 | 25 | N | | | |
| A 134E | | | J5-B1 | 13 | N | | 14 | | P1-23 | 19 | N | | 18 | |
| A 134X | | | J5-B2 | | | 28 | | | SHLD A134 | | | | | |
| A 135 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 135B | 3 | | P1-66 | 19 | N | | 18 | | SHLD A135 | 25 | N | | | |
| A 135E | | | J5-C1 | 13 | N | | 14 | | P1-21 | 19 | N | | 18 | |
| A 135X | | | J5-C2 | | | 28 | | | SHLD A135 | | | | | |
| A 136 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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MIL 2085 - 4-63 WIR

INCHES
0 1 2
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| CONDUCTOR | | | FROM | | | | | | | | TO | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH | | | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | TERMINATION | | | | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | TERMINATION | | | |
| NUMBER | ITEM NO. | 2 | CIRCUIT POINT | 2 | TIN | 2 | ITEM NO. | | SPEC. 1 | NO. | CIRCUIT POINT | 2 | TIN | 2 | ITEM NO. | | SPEC 1 | NO. |
| A 139X | | | J5-G2 | | | 28 | | | | | SHLD A139 | | | | | | | |
| A 140 | 29 | | | 56 | N | | A | 30 | | | | | | | A | 10 | | |
| | | | | | | | 15 | 16 | | | | | | | 5 | 6 | | |
| A 140B | 3 | | P1-53 | 19 | N | | 18 | | | | SHLD A140 | 25 | N | | | | | |
| A 140E | | | J5-H1 | 13 | N | | 14 | | | | P1- 9 | 19 | N | | 18 | | | |
| A 140X | | | J5-H2 | | | 28 | | | | | SHLD A140 | | | | | | | |
| A 141 | 29 | | | 56 | N | | A | 30 | | | | | | | A | 10 | | |
| | | | | | | | 15 | 16 | | | | | | | 5 | 6 | | |
| A 141B | 3 | | P1-54 | 19 | N | | 18 | | | | SHLD A141 | 25 | N | | | | | |
| A 141E | | | J5-J1 | 13 | N | | 14 | | | | P1- 7 | 19 | N | | 18 | | | |
| A 141X | | | J5-J2 | | | 28 | | | | | SHLD A141 | | | | | | | |
| A 142 | 29 | | | 56 | N | | A | 30 | | | | | | | A | 10 | | |
| | | | | | | | 15 | 16 | | | | | | | 5 | 6 | | |
| A 142B | 3 | | P1-43 | 19 | N | | 18 | | | | SHLD A142 | 25 | N | | | | | |
| A 142E | | | J6-A1 | 13 | N | | 14 | | | | P1- 5 | 19 | N | | 18 | | | |
| A 142X | | | J6-A2 | | | 28 | | | | | SHLD A142 | | | | | | | |
| A 143 | 29 | | | 56 | N | | A | 30 | | | | | | | A | 10 | | |
| | | | | | | | 15 | 16 | | | | | | | 5 | 6 | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR | | | FROM | | | | | | | | TO | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH | | | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | TERMINATION | | | | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | TERMINATION | | | |
| NUMBER | ITEM NO. | 2 | CIRCUIT POINT | 2 | TIN | 2 | ITEM NO. | | SPEC. 1 | NO. | CIRCUIT POINT | 2 | TIN | 2 | ITEM NO. | | SPEC 1 | NO. |
| A 143B | 3 | | P1-44 | 19 | N | | 18 | | | | SHLD A143 | 25 | N | | | | | |
| A 143E | | | J6-B1 | 13 | N | | 14 | | | | P1- 3 | 19 | N | | 18 | | | |
| A 143X | | | J6-B2 | | | 28 | | | | | SHLD A143 | | | | | | | |
| A 144 | 29 | | | 56 | N | | A | 30 | | | | | | | A | 10 | | |
| | | | | | | | 15 | 16 | | | | | | | 5 | 6 | | |
| A 144B | 3 | | P1-24 | 19 | N | | 18 | | | | SHLD A144 | 25 | N | | | | | |
| A 144E | | | J6-C1 | 13 | N | | 14 | | | | P1- 1 | 19 | N | | 18 | | | |
| A 144X | | | J6-C2 | | | 28 | | | | | SHLD A144 | | | | | | | |
| A 145 | 29 | | | 56 | N | | A | 30 | | | | | | | A | 10 | | |
| | | | | | | | 15 | 16 | | | | | | | 5 | 6 | | |
| A 145B | 3 | | P1-22 | 19 | N | | 18 | | | | SHLD A145 | 25 | N | | | | | |
| A 145E | | | J6-D1 | 13 | N | | 14 | | | | P1-61 | 19 | N | | 18 | | | |
| A 145X | | | J6-D2 | | | 28 | | | | | SHLD A145 | | | | | | | |
| A 146 | 29 | | | 56 | N | | A | 30 | | | | | | | A | 10 | | |
| | | | | | | | 15 | 16 | | | | | | | 5 | 6 | | |
| A 146B | 3 | | P1-20 | 19 | N | | 18 | | | | SHLD A146 | 25 | N | | | | | |
| A 146E | | | J6-E1 | 13 | N | | 14 | | | | P1-63 | 19 | N | | 18 | | | |
| A 146X | | | J6-E2 | | | 28 | | | | | SHLD A146 | | | | | | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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MIL 2085 - 4-63 WIR

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| CONDUCTOR | | | FROM | | | | | | | | TO | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH | | | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | TERMINATION | | | | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | TERMINATION | | | |
| NUMBER | ITEM NO. | 2 | CIRCUIT POINT | 2 | TIN | 2 | ITEM NO. | | SPEC. 1 | NO. | CIRCUIT POINT | 2 | TIN | 2 | ITEM NO. | | SPEC 1 | NO. |
| | | | | | | | 15 | 16 | | | | | | | 5 | 6 | | |
| A 136B | 3 | | P1-56 | 19 | N | | 18 | | | | SHLD A136 | 25 | N | | | | | |
| A 136E | | | J5-D1 | 13 | N | | 14 | | | | P1-19 | 19 | N | | 18 | | | |
| A 136X | | | J5-D2 | | | 28 | | | | | SHLD A136 | | | | | | | |
| A 137 | 29 | | | 56 | N | | A | 30 | | | | | | | A | 10 | | |
| | | | | | | | 15 | 16 | | | | | | | 5 | 6 | | |
| A 137B | 3 | | P1-58 | 19 | N | | 18 | | | | SHLD A137 | 25 | N | | | | | |
| A 137E | | | J5-E1 | 13 | N | | 14 | | | | P1-17 | 19 | N | | 18 | | | |
| A 137X | | | J5-E2 | | | 28 | | | | | SHLD A137 | | | | | | | |
| A 138 | 29 | | | 56 | N | | A | 30 | | | | | | | A | 10 | | |
| | | | | | | | 15 | 16 | | | | | | | 5 | 6 | | |
| A 138B | 3 | | P1-60 | 19 | N | | 18 | | | | SHLD A138 | 25 | N | | | | | |
| A 138E | | | J5-F1 | 13 | N | | 14 | | | | P1-13 | 19 | N | | 18 | | | |
| A 138X | | | J5-F2 | | | 28 | | | | | SHLD A138 | | | | | | | |
| A 139 | 29 | | | 56 | N | | A | 30 | | | | | | | A | 10 | | |
| | | | | | | | 15 | 16 | | | | | | | 5 | 6 | | |
| A 139B | 3 | | P1-52 | 19 | N | | 18 | | | | SHLD A139 | 25 | N | | | | | |
| A 139E | | | J5-G1 | 13 | N | | 14 | | | | P1-11 | 19 | N | | 18 | | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR | | | FROM | | | | | | | | TO | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH | | | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | TERMINATION | | | | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | TERMINATION | | | |
| NUMBER | ITEM NO. | 2 | CIRCUIT POINT | 2 | TIN | 2 | ITEM NO. | | SPEC. 1 | NO. | CIRCUIT POINT | 2 | TIN | 2 | ITEM NO. | | SPEC 1 | NO. |
| A 147 | 29 | | | 56 | N | | A | 30 | | | | | | | A | 10 | | |
| | | | | | | | 15 | 16 | | | | | | | 5 | 6 | | |
| A 147B | 3 | | P1-18 | 19 | N | | 18 | | | | SHLD A147 | 25 | N | | | | | |
| A 147E | | | J6-F1 | 13 | N | | 14 | | | | P1-65 | 19 | N | | 18 | | | |
| A 147X | | | J6-F2 | | | 28 | | | | | SHLD A147 | | | | | | | |
| A 148 | 29 | | | 56 | N | | A | 30 | | | | | | | A | 10 | | |
| | | | | | | | 15 | 16 | | | | | | | 5 | 6 | | |
| A 148B | 3 | | P1-16 | 19 | N | | 18 | | | | SHLD A148 | 25 | N | | | | | |
| A 148E | | | J6-G1 | 13 | N | | 14 | | | | P1-55 | 19 | N | | 18 | | | |
| A 148X | | | J6-G2 | | | 28 | | | | | SHLD A148 | | | | | | | |
| A 149 | 29 | | | 56 | N | | A | 30 | | | | | | | A | 10 | | |
| | | | | | | | 15 | 16 | | | | | | | 5 | 6 | | |
| A 149B | 3 | | P1-14 | 19 | N | | 18 | | | | SHLD A149 | 25 | N | | | | | |
| A 149E | | | J6-H1 | 13 | N | | 14 | | | | P1-57 | 19 | N | | 18 | | | |
| A 149X | | | J6-H2 | | | 28 | | | | | SHLD A149 | | | | | | | |
| A 150 | 29 | | | 56 | N | | A | 30 | | | | | | | A | 10 | | |
| | | | | | | | 15 | 16 | | | | | | | 5 | 6 | | |
| A 150B | 3 | | P6- 3 | 19 | N | | 18 | | | | SHLD A150 | 25 | N | | | | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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INCHES
0 1 2
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| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | 2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | FROM TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TO TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 154B | 3 | | P2-30 | 19 | N | | 17 | | SHLD A154 | 25 | N | | | |
| A 154E | | | J7-E1 | 13 | N | | 14 | | P2-44 | 19 | N | | 18 | |
| A 154X | | | J7-E2 | | | 28 | | | SHLD A154 | | | | | |
| A 155 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 155B | 3 | | P2-20 | 19 | N | | 17 | | SHLD A155 | 25 | N | | | |
| A 155E | | | J7-F1 | 13 | N | | 14 | | P2-43 | 19 | N | | 18 | |
| A 155X | | | J7-F2 | | | 28 | | | SHLD A155 | | | | | |
| A 156 | 29 | | | | | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 156B | 3 | | P2-22 | 19 | N | | 17 | | SHLD A156 | 25 | N | | | |
| A 156E | | | J7-G1 | 13 | N | | 14 | | P2-39 | 19 | N | | 18 | |
| A 156X | | | J7-G2 | | | 28 | | | SHLD A156 | | | | | |
| A 157 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 157B | 3 | | P2-23 | 19 | N | | 17 | | SHLD A157 | 25 | N | | | |
| A 157E | | | J7-H1 | 13 | N | | 14 | | P2-38 | 19 | N | | 18 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GBS WIRING HARNESS A F 1900096

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | 2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | FROM TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TO TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 157X | | | J7-H2 | | | 28 | | | SHLD A157 | | | | | |
| A 158 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 158B | 3 | | P2-24 | 19 | N | | 17 | | SHLD A158 | 25 | N | | | |
| A 158E | | | J7-J1 | 13 | N | | 14 | | P2-37 | 19 | N | | 18 | |
| A 158X | | | J7-J2 | | | 28 | | | SHLD A158 | | | | | |
| A 159 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 159B | 3 | | P2-13 | 19 | N | | 17 | | SHLD A159 | 25 | N | | | |
| A 159E | | | J8-A1 | 13 | N | | 14 | | P2-33 | 19 | N | | 18 | |
| A 159X | | | J8-A2 | | | 28 | | | SHLD A159 | | | | | |
| A 160 | 29 | | | 56 | | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 160B | 3 | | P2-14 | 19 | N | | 17 | | SHLD A160 | 25 | N | | | |
| A 160E | | | J8-B1 | 13 | N | | 14 | | P2-32 | 19 | N | | 18 | |
| A 160X | | | J8-B2 | | | 28 | | | SHLD A160 | | | | | |
| A 161 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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SCALE - NONE REV LTR F SHEET 27 OF 47

MIL 2085 - 4-63 WIR

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GBS WIRING HARNESS A F 1900096

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | 2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | FROM TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TO TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 150E | | | J7-A1 | 13 | N | | 14 | | P6- 4 | 19 | N | | 18 | |
| A 150X | | | J7-A2 | | | 28 | | | SHLD A150 | | | | | |
| A 151 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 151B | 3 | | P2-36 | 19 | N | | 17 | | SHLD A151 | 25 | N | | | |
| A 151E | | | J7-B1 | 13 | N | | 14 | | P2-51 | 19 | N | | 18 | |
| A 151X | | | J7-B2 | | | 28 | | | SHLD A151 | | | | | |
| A 152 | 29 | | | 56 | | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 152B | 3 | | P2-26 | 19 | N | | 17 | | SHLD A152 | 25 | N | | | |
| A 152E | | | J7-C1 | 13 | N | | 14 | | P2-49 | 19 | N | | 18 | |
| A 152X | | | J7-C2 | | | 28 | | | SHLD A152 | | | | | |
| A 153 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 153B | 3 | | P2-28 | 19 | N | | 17 | | SHLD A153 | 25 | N | | | |
| A 153E | | | J7-D1 | 13 | N | | 14 | | P2-48 | 19 | N | | 18 | |
| A 153X | | | J7-D2 | | | 28 | | | SHLD A153 | | | | | |
| A 154 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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SIZE A 1900096

SCALE - NONE REV LTR F SHEET 25 OF 47

MIL 2085 - 4-63 WIR

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GBS WIRING HARNESS A F 1900096

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | 2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | FROM TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TO TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 161B | 3 | | P2-15 | 19 | N | | 17 | | SHLD A161 | 25 | N | | | |
| A 161E | | | J8-C1 | 13 | N | | 14 | | P2-31 | 19 | N | | 18 | |
| A 161X | | | J8-C2 | | | 28 | | | SHLD A161 | | | | | |
| A 162 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 162B | 3 | | P2-50 | 19 | N | | 17 | | SHLD A162 | 25 | N | | | |
| A 162E | | | J8-D1 | 13 | N | | 14 | | P2-34 | 19 | N | | 18 | |
| A 162X | | | J8-D2 | | | 28 | | | SHLD A162 | | | | | |
| A 163 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 163B | 3 | | P2-47 | 19 | N | | 17 | | SHLD A163 | 25 | N | | | |
| A 163E | | | J8-E1 | 13 | N | | 14 | | P2-35 | 19 | N | | 18 | |
| A 163X | | | J8-E2 | | | 28 | | | SHLD A163 | | | | | |
| A 164 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 164B | 3 | | P2-46 | 19 | N | | 17 | | SHLD A164 | 25 | N | | | |
| A 164E | | | J8-F1 | 13 | N | | 14 | | P2-25 | 19 | N | | 18 | |
| A 164X | | | J8-F2 | | | 28 | | | SHLD A164 | | | | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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MIL 2085 - 4-63 WIR

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

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| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 168E | | J9-A1 | 13 | N | | 14 | | P6- 8 | 19 | N | | 18 | |
| A 168X | | J9-A2 | | | 28 | | | SHLD A168 | | | | | |
| A 169 | 29 | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | 15 16 | | | | | | 5 6 | |
| A 169B | 3 | P6-10 | 19 | N | | 18 | | SHLD A169 | 25 | N | | | |
| A 169E | | J9-B1 | 13 | N | | 14 | | P6- 9 | 19 | N | | 18 | |
| A 169X | | J9-B2 | | | 28 | | | SHLD A169 | | | | | |
| A 170 | 29 | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | 15 16 | | | | | | 5 6 | |
| A 170B | 3 | P5-12 | 19 | N | | 18 | | SHLD A170 | 25 | N | | | |
| A 170E | | J9-C1 | 13 | N | | 14 | | P5-61 | 19 | N | | 18 | |
| A 170X | | J9-C2 | | | | 28 | | SHLD A170 | | | | | |
| A 171 | 29 | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | 15 16 | | | | | | 5 6 | |
| A 171B | 3 | P5-11 | 19 | N | | 18 | | SHLD A171 | 25 | N | | | |
| A 171E | | J9-D1 | 13 | N | | 14 | | P5-55 | 19 | N | | 18 | |
| A 171X | | J9-D2 | | | 28 | | | SHLD A171 | | | | | |
| A 172 | 29 | | 56 | | | A 30 | | | | | | A 10 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE-NONE | REV LTR F | SHEET 30 OF 47

MIL 2085 - 4-63 WIR

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GBS WIRING HARNESS A F 1900096

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 15 16 | | | | | | 5 6 | |
| A 172B | 3 | P5- 8 | 19 | N | | 18 | | SHLD A172 | 25 | N | | | |
| A 172E | | J9-E1 | 13 | N | | 14 | | P5-57 | 19 | N | | 18 | |
| A 172X | | J9-E2 | | | 28 | | | SHLD A172 | | | | | |
| A 173 | 29 | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | 15 16 | | | | | | 5 6 | |
| A 173B | 3 | P5- 6 | 19 | N | | 18 | | SHLD A173 | 25 | N | | | |
| A 173E | | J9-F1 | 13 | N | | 14 | | P5-59 | 19 | N | | 18 | |
| A 173X | | J9-F2 | | | 28 | | | SHLD A173 | | | | | |
| A 174 | 29 | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | 15 16 | | | | | | 5 6 | |
| A 174B | 3 | P5- 4 | 19 | N | | 18 | | SHLD A174 | 25 | N | | | |
| A 174E | | J9-G1 | 13 | N | | 14 | | P5-49 | 19 | N | | 18 | |
| A 174X | | J9-G2 | | | 28 | | | SHLD A174 | | | | | |
| A 175 | 29 | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | 15 16 | | | | | | 5 6 | |
| A 175B | 3 | P5- 2 | 19 | N | | 18 | | SHLD A175 | 25 | N | | | |
| A 175E | | J9-H1 | 13 | N | | 14 | | P5-51 | 19 | N | | 18 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE-NONE | REV LTR F | SHEET 31 OF 47

MIL 2085 - 4-63 WIR

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GBS WIRING HARNESS A F 1900096

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 165 | 29 | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | 15 16 | | | | | | 5 6 | |
| A 165B | 3 | P2-45 | 19 | N | | 17 | | SHLD A165 | 25 | N | | | |
| A 165E | | J8-G1 | 13 | N | | 14 | | P2-27 | 19 | N | | 18 | |
| A 165X | | J8-G2 | | | 28 | | | SHLD A165 | | | | | |
| A 166 | 29 | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | 15 16 | | | | | | 5 6 | |
| A 166B | 3 | P2-42 | 19 | N | | 17 | | SHLD A166 | 25 | N | | | |
| A 166E | | J8-H1 | 13 | N | | 14 | | P2-29 | 19 | N | | 18 | |
| A 166X | | J8-H2 | | | 28 | | | SHLD A166 | | | | | |
| A 167 | 29 | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | 15 16 | | | | | | 5 6 | |
| A 167B | 3 | P2-41 | 19 | N | | 17 | | SHLD A167 | 25 | N | | | |
| A 167E | | J8-J1 | 13 | N | | 14 | | P2-19 | 19 | N | | 18 | |
| A 167X | | J8-J2 | | | 28 | | | SHLD A167 | | | | | |
| A 168 | 29 | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | 15 16 | | | | | | 5 6 | |
| A 168B | 3 | P6- 7 | 19 | N | | 18 | | SHLD A168 | 25 | N | | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE-NONE | REV LTR F | SHEET 29 OF 47

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GBS WIRING HARNESS A F 1900096

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 175X | | J9-H2 | | | 28 | | | SHLD A175 | | | | | |
| A 176 | 29 | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | 15 16 | | | | | | 5 6 | |
| A 176B | 3 | P3-11 | 19 | N | | 18 | | SHLD A176 | 25 | N | | | |
| A 176E | | J10-A1 | 13 | N | | 14 | | P3-58 | 19 | N | | 18 | |
| A 176X | | J10-A2 | | | 28 | | | SHLD A176 | | | | | |
| A 177 | 29 | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | 15 16 | | | | | | 5 6 | |
| A 177B | 3 | P3- 9 | 19 | N | | 18 | | SHLD A177 | 25 | N | | | |
| A 177E | | J10-B1 | 13 | N | | 14 | | P3-50 | 19 | N | | 18 | |
| A 177X | | J10-B2 | | | 28 | | | SHLD A177 | | | | | |
| A 178 | 29 | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | 15 16 | | | | | | 5 6 | |
| A 178B | 3 | P3- 7 | 19 | N | | 18 | | SHLD A178 | 25 | N | | | |
| A 178E | | J10-C1 | 13 | N | | 14 | | P3-52 | 19 | N | | 18 | |
| A 178X | | J10-C2 | | | 28 | | | SHLD A178 | | | | | |
| A 179 | 29 | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | 15 16 | | | | | | 5 6 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE-NONE | REV LTR F | SHEET 32 OF 47

MIL 2085 - 4-63 WIR

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

GBS WIRING HARNESS A F 1900096

| CONDUCTOR | | | FROM | | | | | | | TO | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | INDIVIDUAL LENGTH ITEM NO. | 2 | CIRCUIT POINT | STRIP WIRE OR JACKET 2 | T I N | CUT WIRE OR SHIELD 2 | TERMINATION SPEC. 1 ITEM NO. | | NO. | CIRCUIT POINT | STRIP WIRE OR JACKET 2 | T I N | CUT WIRE OR SHIELD 2 | TERMINATION SPEC 1 ITEM NO. | | NO. |
| A 187 | 3 | | J11- 6 | 19 | N | | 17 | | | P2-49 | 19 | N | | | | |
| A 188 | 3 | | J11- 7 | 19 | N | | 17 | | | P1-21 | 19 | N | | | | |
| A 189 | 3 | | J11- 8 | 19 | N | | 17 | | | P3-20 | 19 | N | | 17 | | |
| A 190 | 3 | | J11- 9 | 19 | N | | 17 | | | P2-48 | 19 | N | | | | |
| A 191 | 3 | | J11-10 | 19 | N | | 17 | | | P1-19 | 19 | N | | | | |
| A 192 | 3 | | J11-11 | 19 | N | | 17 | | | P3-18 | 19 | N | | 17 | | |
| A 193 | 3 | | J11-12 | 19 | N | | 17 | | | P2-44 | 19 | N | | | | |
| A 194 | 3 | | J11-13 | 19 | N | | 17 | | | P1-17 | 19 | N | | | | |
| A 195 | 3 | | J11-14 | 19 | N | | 17 | | | P3-16 | 19 | N | | 17 | | |
| A 196 | 3 | | J11-15 | 19 | N | | 17 | | | P2-43 | 19 | N | | | | |
| A 197 | 3 | | J11-16 | 19 | N | | 17 | | | P1-13 | 19 | N | | | | |
| A 198 | 3 | | J11-17 | 19 | N | | 17 | | | P3-14 | 19 | N | | 17 | | |
| A 199 | 3 | | J11-18 | 19 | N | | 17 | | | P2-39 | 19 | N | | | | |
| A 200 | 3 | | J11-19 | 19 | N | | 17 | | | P1-11 | 19 | N | | | | |
| A 201 | 3 | | J11-20 | 19 | N | | 17 | | | P3-12 | 19 | N | | 17 | | |
| A 202 | 3 | | J11-21 | 19 | N | | 17 | | | P2-38 | 19 | N | | | | |
| A 203 | 3 | | J11-22 | 19 | N | | 17 | | | P1- 9 | 19 | N | | | | |
| A 204 | 3 | | J11-23 | 19 | N | | 17 | | | P3-10 | 19 | N | | 17 | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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MIL 2085 - 4-63 WIR

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GBS WIRING HARNESS A F 1900096

| CONDUCTOR | | | FROM | | | | | | | TO | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | INDIVIDUAL LENGTH ITEM NO. | 2 | CIRCUIT POINT | STRIP WIRE OR JACKET 2 | T I N | CUT WIRE OR SHIELD 2 | TERMINATION SPEC. 1 ITEM NO. | | NO. | CIRCUIT POINT | STRIP WIRE OR JACKET 2 | T I N | CUT WIRE OR SHIELD 2 | TERMINATION SPEC 1 ITEM NO. | | NO. |
| A 205 | 3 | | J11-24 | 19 | N | | 17 | | | P2-37 | 19 | N | | | | |
| A 206 | 3 | | J11-25 | 19 | N | | 17 | | | P1- 7 | 19 | N | | | | |
| A 207 | 3 | | J11-26 | 19 | N | | 17 | | | P3- 8 | 19 | N | | 17 | | |
| A 208 | 3 | | J11-27 | 19 | N | | 17 | | | P2-33 | 19 | N | | | | |
| A 209 | 3 | | J11-28 | 19 | N | | 17 | | | P1- 5 | 19 | N | | | | |
| A 210 | 3 | | J11-29 | 19 | N | | 17 | | | P3- 6 | 19 | N | | 17 | | |
| A 211 | 3 | | J11-30 | 19 | N | | 17 | | | P2-32 | 19 | N | | | | |
| A 212 | 3 | | J11-31 | 19 | N | | 17 | | | P1- 3 | 19 | N | | | | |
| A 213 | 3 | | J11-32 | 19 | N | | 17 | | | P3- 4 | 19 | N | | 17 | | |
| A 214 | 3 | | J11-33 | 19 | N | | 17 | | | P2-31 | 19 | N | | | | |
| A 215 | 3 | | J11-34 | 19 | N | | 17 | | | P1- 1 | 19 | N | | | | |
| A 216 | 3 | | J11-35 | 19 | N | | 17 | | | P3- 2 | 19 | N | | 17 | | |
| A 217 | 3 | | J11-36 | 19 | N | | 17 | | | P2-34 | 19 | N | | | | |
| A 218 | 3 | | J11-37 | 19 | N | | 17 | | | P1-61 | 19 | N | | | | |
| A 219 | 3 | | J11-38 | 19 | N | | 17 | | | P3-61 | 19 | N | | 17 | | |
| A 220 | 3 | | J11-39 | 19 | N | | 17 | | | P2-35 | 19 | N | | | | |
| A 221 | 3 | | J11-40 | 19 | N | | 17 | | | P1-63 | 19 | N | | | | |
| A 222 | 3 | | J11-41 | 19 | N | | 17 | | | P3-62 | 19 | N | | 17 | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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MIL 2085 - 4-63 WIR

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GBS WIRING HARNESS A F 1900096

| CONDUCTOR | | | FROM | | | | | | | TO | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | INDIVIDUAL LENGTH ITEM NO. | 2 | CIRCUIT POINT | STRIP WIRE OR JACKET 2 | T I N | CUT WIRE OR SHIELD 2 | TERMINATION SPEC. 1 ITEM NO. | | NO. | CIRCUIT POINT | STRIP WIRE OR JACKET 2 | T I N | CUT WIRE OR SHIELD 2 | TERMINATION SPEC 1 ITEM NO. | | NO. |
| A 179B | 3 | | P3- 5 | 19 | N | | 18 | | | SHLD A179 | 25 | N | | | | |
| A 179E | | | J10-D1 | 13 | N | | 14 | | | P3-54 | 19 | N | | 18 | | |
| A 179X | | | J10-D2 | | | 28 | | | | SHLD A179 | | | | | | |
| A 180 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 180B | 3 | | P3- 3 | 19 | N | | 18 | | | SHLD A180 | 25 | N | | | | |
| A 180E | | | J10-E1 | 13 | N | | 14 | | | P3-44 | 19 | N | | 18 | | |
| A 180X | | | J10-E2 | | | 28 | | | | SHLD A180 | | | | | | |
| A 181 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 181B | 3 | | P3- 1 | 19 | N | | 17 | | | SHLD A181 | 25 | N | | | | |
| A 181E | | | J10-F1 | 13 | N | | 14 | | | P3-46 | 19 | N | | 17 | | |
| A 181X | | | J10-F2 | | | 28 | | | | SHLD A181 | | | | | | |
| A 182 | 3 | | J11- 1 | 19 | N | | 17 | | | P1-25 | 19 | N | | | | |
| A 183 | 3 | | J11- 2 | 19 | N | | 17 | | | P3-24 | 19 | N | | 17 | | |
| A 184 | 3 | | J11- 3 | 19 | N | | 17 | | | P2-51 | 19 | N | | | | |
| A 185 | 3 | | J11- 4 | 19 | N | | 17 | | | P1-23 | 19 | N | | | | |
| A 186 | 3 | | J11- 5 | 19 | N | | 17 | | | P3-22 | 19 | N | | 17 | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GBS WIRING HARNESS A F 1900096

| CONDUCTOR | | | FROM | | | | | | | TO | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | INDIVIDUAL LENGTH ITEM NO. | 2 | CIRCUIT POINT | STRIP WIRE OR JACKET 2 | T I N | CUT WIRE OR SHIELD 2 | TERMINATION SPEC. 1 ITEM NO. | | NO. | CIRCUIT POINT | STRIP WIRE OR JACKET 2 | T I N | CUT WIRE OR SHIELD 2 | TERMINATION SPEC 1 ITEM NO. | | NO. |
| A 223 | 3 | | J11-42 | 19 | N | | 17 | | | P2-25 | 19 | N | | | | |
| A 224 | 3 | | J11-43 | 19 | N | | 17 | | | P1-65 | 19 | N | | | | |
| A 225 | 3 | | J11-44 | 19 | N | | 17 | | | P3-64 | 19 | N | | 17 | | |
| A 226 | 3 | | J11-45 | 19 | N | | 17 | | | P2-27 | 19 | N | | | | |
| A 227 | 3 | | J11-46 | 19 | N | | 17 | | | P1-55 | 19 | N | | | | |
| A 228 | 3 | | J11-47 | 19 | N | | 17 | | | P3-66 | 19 | N | | 17 | | |
| A 229 | 3 | | J11-48 | 19 | N | | 17 | | | P2-29 | 19 | N | | | | |
| A 230 | 3 | | J11-49 | 19 | N | | 17 | | | P1-57 | 19 | N | | | | |
| A 231 | 3 | | J11-50 | 19 | N | | 17 | | | P3-56 | 19 | N | | 17 | | |
| A 232 | 3 | | J11-51 | 19 | N | | 17 | | | P2-19 | 19 | N | | | | |
| A 236 | 3 | | J12- 1 | 19 | N | | 17 | | | P2-52 | 19 | N | | 18 | | |
| A 237 | 3 | | J12- 2 | 19 | N | | 17 | | | P2-53 | 19 | N | | 18 | | |
| A 238 | 3 | | J12- 3 | 19 | N | | 17 | | | P2-54 | 19 | N | | 18 | | |
| A 239 | 3 | | J12- 4 | 19 | N | | 17 | | | P2-55 | 19 | N | | 18 | | |
| A 240 | 3 | | J12- 5 | 19 | N | | 17 | | | P2-56 | 19 | N | | 18 | | |
| A 241 | 3 | | J12- 6 | 19 | N | | 17 | | | P2-57 | 19 | N | | 18 | | |
| A 242 | 3 | | J12- 7 | 19 | N | | 17 | | | P2-58 | 19 | N | | 18 | | |
| A 243 | 3 | | J12- 8 | 19 | N | | 17 | | | P2-59 | 19 | N | | 18 | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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1900096
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MIL 2085 - 4-63 WIR

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

GBS
WIRING HARNESS A F 1900096

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | FROM CIRCUIT POINT | FROM CUT WIRE OR SHIELD ITEM | T I N | FROM TERMINATION SPEC. ITEM NO. | TO CIRCUIT POINT | TO CUT WIRE OR SHIELD ITEM | T I N | TO TERMINATION SPEC ITEM NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 262 | 3 | J12-29 | 19 | N | 18 | P5-18 | 19 | N | 17 |
| A 263 | 3 | J12-30 | 19 | N | 18 | P7-10 | 19 | N | 17 |
| A 264 | 3 | P1-14 | 19 | N |  | P3-15 | 19 | N | 17 |
| A 265 | 3 | P1-16 | 19 | N |  | P3-17 | 19 | N | 17 |
| A 266 | 3 | P1-18 | 19 | N | 18 | P3-19 | 19 | N | 17 |
| A 267 | 3 | P1-20 | 19 | N |  | P3-21 | 19 | N | 17 |
| A 268 | 3 | P1-22 | 19 | N |  | P3-23 | 19 | N | 17 |
| A 269 | 3 | P1-24 | 19 | N |  | P3-25 | 19 | N | 17 |
| A 270 | 3 | P1-43 | 19 | N |  | P3-45 | 19 | N | 17 |
| A 271 | 3 | P1-44 | 19 | N |  | P3-47 | 19 | N | 17 |
| A 272 | 1 |  |  |  | A 10 |  |  |  | A 9 |
|  |  |  |  |  |  |  |  |  | 7 8 |
| A 272B | 4 | E27 | 25 | N |  | SHLD A272 | 25 | N |  |
| A 272L |  | P1-15 | 19 | N | 17 | P6- 2 | 19 | N | 17 |
| A 272R |  | P1-50 | 19 | N | 17 | P6- 1 | 19 | N | 17 |
| A 273 | 3 | P1-52 | 19 | N |  | P3-51 | 19 | N | 17 |
| A 274 | 3 | P1-53 | 19 | N |  | P3-53 | 19 | N | 17 |
| A 275 | 3 | P1-54 | 19 | N |  | P3-43 | 19 | N | 17 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A 1900096
SCALE-NONE REV LTR F SHEET 38 OF 47

MIL 2085 - 4-63 WIR

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GBS
WIRING HARNESS A F 1900096

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | FROM CIRCUIT POINT | FROM CUT WIRE OR SHIELD ITEM | T I N | FROM TERMINATION SPEC. ITEM NO. | TO CIRCUIT POINT | TO CUT WIRE OR SHIELD ITEM | T I N | TO TERMINATION SPEC ITEM NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 276 | 3 | P1-56 | 19 | N |  | P3-57 | 19 | N | 17 |
| A 277 |  | P1-58 | 19 | N |  | P3-59 | 19 | N | 17 |
| A 278 |  | P1-60 | 19 | N |  | P3-49 | 19 | N | 17 |
| A 279 | 3 | P1-62 | 19 | N |  | P3-63 | 19 | N | 17 |
| A 280 | 3 | P1-64 | 19 | N |  | P3-65 | 19 | N | 17 |
| A 281 | 3 | P1-66 | 19 | N |  | P3-55 | 19 | N | 17 |
| A 282 | 3 | P2-63 | 19 | N | 18 | P6-46 | 19 | N | 18 |
| A 283 | 1 |  |  |  | A 10 |  |  |  | A 9 |
|  |  |  |  |  |  |  |  |  | 7 8 |
| A 283B | 3 | E27 | 25 | N |  | SHLD A283 | 25 | N |  |
| A 283L |  | P2-40 | 19 | N | 17 | P6- 6 | 19 | N | 17 |
| A 283R |  | P2-21 | 19 | N | 17 | P6- 5 | 19 | N | 17 |
| A 284 | 3 | P3-13 | 19 | N | 17 | P6-19 | 19 | N | 17 |
| A 285 | 3 | P3-26 | 19 | N | 17 | S10SW2-NC | 25 | Y |  |
| A 286 | 3 | P3-32 | 19 | N | 18 | P5-38 | 19 | N | 17 |
| A 287 | 3 | P3-33 | 19 | N | 18 | P5-39 | 19 | N | 17 |
| A 288 | 3 | P3-37 | 19 | N | 18 | P5-44 | 19 | N | 17 |
| A 289 | 3 | P3-38 | 19 | N | 18 | P5-45 | 19 | N | 17 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A 1900096
SCALE-NONE REV LTR F SHEET 39 OF 47

MIL 2085 - 4-63 WIR

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GBS
WIRING HARNESS A F 1900096

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | FROM CIRCUIT POINT | FROM CUT WIRE OR SHIELD ITEM | T I N | FROM TERMINATION SPEC. ITEM NO. | TO CIRCUIT POINT | TO CUT WIRE OR SHIELD ITEM | T I N | TO TERMINATION SPEC ITEM NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 244 | 3 | J12- 9 | 19 | N | 17 | P2-60 | 19 | N | 18 |
| A 245 | 3 | J12-10 | 19 | N | 18 | P7-38 | 19 | N | 17 |
| A 246 | 3 | J12-11 | 19 | N | 18 | P2-61 | 19 | N | 18 |
| A 247 | 3 | J12-11 | 19 | N | 18 | S2A- 1A | 25 | Y |  |
| A 248 | 3 | J12-12 | 19 | N | 18 | P2-62 | 19 | N | 18 |
| A 249 | 3 | J12-12 | 19 | N | 18 | S2A- 3A | 25 | Y |  |
| A 250 | 3 | J12-16 | 19 | N | 18 | P3-48 | 19 | N | 18 |
| A 251 | 3 | J12-17 | 19 | N | 18 | P3-37 | 19 | N | 18 |
| A 252 | 3 | J12-18 | 19 | N | 18 | P3-38 | 19 | N | 18 |
| A 253 | 3 | J12-19 | 19 | N | 18 | P3-39 | 19 | N | 18 |
| A 254 | 3 | J12-20 | 19 | N | 18 | P3-40 | 19 | N | 18 |
| A 255 | 3 | J12-21 | 19 | N | 18 | P3-41 | 19 | N | 18 |
| A 256 | 3 | J12-22 | 19 | N | 18 | P3-42 | 19 | N | 18 |
| A 257 | 3 | J12-23 | 19 | N | 18 | P3-32 | 19 | N | 18 |
| A 258 | 3 | J12-24 | 19 | N | 18 | P3-33 | 19 | N | 18 |
| A 259 | 3 | J12-26 | 19 | N | 18 | P3-34 | 19 | N | 17 |
| A 260 | 3 | J12-27 | 19 | N | 18 | P3-31 | 19 | N | 17 |
| A 261 | 3 | J12-28 | 19 | N | 18 | P5-40 | 19 | N | 17 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A 1900096
SCALE-NONE REV LTR F SHEET 37 OF 47

MIL 2085 - 4-63 WIR

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GBS
WIRING HARNESS A F 1900096

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | FROM CIRCUIT POINT | FROM CUT WIRE OR SHIELD ITEM | T I N | FROM TERMINATION SPEC. ITEM NO. | TO CIRCUIT POINT | TO CUT WIRE OR SHIELD ITEM | T I N | TO TERMINATION SPEC ITEM NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 290 | 3 | P3-39 | 19 | N | 18 | P5-46 | 19 | N | 17 |
| A 291 | 3 | P3-40 | 19 | N | 18 | P5-47 | 19 | N | 17 |
| A 292 | 3 | P3-41 | 19 | N | 18 | P5-48 | 19 | N | 17 |
| A 293 | 3 | P3-42 | 19 | N | 18 | P5-37 | 19 | N | 17 |
| A 294 | 3 | P3-48 | 19 | N | 18 | P5-43 | 19 | N | 17 |
| A 296 |  | P3-60 | 19 | N | 17 | P6-17 | 19 | N | 17 |
| A 297 | 3 | P5-17 | 19 | N | 17 | S10SW2-NO | 25 | Y |  |
| A 298 | 1 |  |  |  | A 10 |  |  |  | A 9 |
|  |  |  |  |  |  |  |  |  | 7 8 |
| A 298B | 4 | E27 | 25 | N | 13 19 | SHLD A298 | 25 | N |  |
| A 298L |  | P5-10 | 19 | N | 17 | P6-20 | 19 | N | 17 |
| A 298R |  | P5-56 | 19 | N | 17 | P6-18 | 19 | N | 17 |
| A 299 | 2 |  |  |  | 11 |  |  |  | 5 6 10 |
| A 299B | 4 | E28 | 25 | N |  | SHLD A299 | 25 | N |  |
| A 299W |  | P5-65 | 19 | N | 17 | XF2- 2 | 25 | Y |  |
| A 300 | 1 |  |  |  | A 9 |  |  |  | A 10 |
|  |  |  |  |  | 7 8 |  |  |  |  |
| A 300A | 4 | SHLD A300 | 25 | N |  | E27 | 25 | N |  |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A 1900096
SCALE-NONE REV LTR F SHEET 40 OF 47

MIL 2085 - 4-63 WIR

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

GBS WIRING HARNESS A F 1900096

| CONDUCTOR | | | FROM | | | | | | TO | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2 | CIRCUIT POINT | 2 | TIN | 2 | ITEM NO. | NO. | CIRCUIT POINT | 2 | TIN | 2 | ITEM NO. | NO. |
| A 317 | 3 | | P7- 4 | 19 | N | | 18 | | S6A- 5A | 25 | Y | | | |
| A 318 | 3 | | P7- 5 | 19 | N | | 18 | | S6A- 6A | 25 | Y | | | |
| A 319 | 3 | | P7- 6 | 19 | N | | 18 | | S6A- 7A | 25 | Y | | | |
| A 320 | 3 | | P7- 7 | 19 | N | | 18 | | S6A- 8A | 25 | Y | | | |
| A 321 | 3 | | P7- 8 | 19 | N | | 18 | | S6A- 9A | 25 | Y | | | |
| A 322 | 3 | | P7- 9 | 19 | N | | 18 | | S6A-10A | 25 | Y | | | |
| A 323 | 3 | | P7-29 | 19 | N | | 17 | | S7A-10A | 25 | Y | | | |
| A 324 | 3 | | P7-30 | 19 | N | | 17 | | S7A- 9A | 25 | Y | | | |
| A 325 | 3 | | P7-31 | 19 | N | | 17 | | S7A- 8A | 25 | Y | | | |
| A 326 | 3 | | P7-32 | 19 | N | | 17 | | S7A- 7A | 25 | Y | | | |
| A 327 | 3 | | P7-33 | 19 | N | | 17 | | S7A- 6A | 25 | Y | | | |
| A 328 | 3 | | P7-34 | 19 | N | | 17 | | S7A- 5A | 25 | Y | | | |
| A 329 | 3 | | P7-35 | 19 | N | | 17 | | S7A- 4A | 25 | Y | | | |
| A 330 | 3 | | P7-36 | 19 | N | | 17 | | S7A- 3A | 25 | Y | | | |
| A 331 | 3 | | P7-37 | 19 | N | | 17 | | S7A- 2A | 25 | Y | | | |
| A 332 | 1 | | | | | | A 10 | | | | | | A 9 | |
| | | | | | | | | | | | | | 7 8 | |
| A 332B | 4 | | E28 | 25 | N | | 13 19 | | SHLD A332 | 25 | N | | | |

1▷ THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2▷ DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

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GBS WIRING HARNESS A F 1900096

| CONDUCTOR | | | FROM | | | | | | TO | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2 | CIRCUIT POINT | 2 | TIN | 2 | ITEM NO. | NO. | CIRCUIT POINT | 2 | TIN | 2 | ITEM NO. | NO. |
| A 332L | | | S1A- 1B | 25 | Y | | | | S2B- 1B | 25 | Y | | | |
| A 332R | | | S1A- 1A | 25 | Y | | | | S2B- 1A | 25 | Y | | | |
| A 333 | 1 | | | | | | A 10 | | | | | | A 9 | |
| | | | | | | | | | | | | | 7 8 | |
| A 333A | 4 | | E28 | 25 | N | | | | SHLD A333 | 25 | N | | | |
| A 333L | | | S1A- 3B | 25 | Y | | | | S2B- 3B | 25 | Y | | | |
| A 333R | | | S1A- 3A | 25 | Y | | | | S2B- 3A | 25 | Y | | | |
| A 334 | 3 | | S2A- 5A | | | | | | S10SW2-C | 25 | Y | | | |
| A 335 | 1 | | | | | | A 9 | | | | | | A 10 | |
| | | | | | | | 7 8 | | | | | | | |
| A 335A | 4 | | SHLD A335 | 25 | N | | | | E28 | 25 | N | | | |
| A 335L | | | S2B- 1B | 25 | Y | | | | S8A- 1B | 25 | Y | | | |
| A 335R | | | S2B- 1A | 25 | Y | | | | S8A- 1A | 25 | Y | | | |
| A 336 | 1 | | | | | | A 9 | | | | | | A 10 | |
| | | | | | | | 7 8 | | | | | | | |
| A 336A | 4 | | SHLD A336 | 25 | N | | | | E28 | 25 | N | | | |
| A 336L | | | S2B- 3B | 25 | Y | | | | S8A- 3B | 25 | Y | | | |
| A 336R | | | S2B- 3A | 25 | Y | | | | S8A- 3A | 25 | Y | | | |

1▷ THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2▷ DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE-NONE | REV LTR F | SHEET 43 OF 47

MIL 2085 - 4-63 WIR

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GBS WIRING HARNESS A F 1900096

| CONDUCTOR | | | FROM | | | | | | TO | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2 | CIRCUIT POINT | 2 | TIN | 2 | ITEM NO. | NO. | CIRCUIT POINT | 2 | TIN | 2 | ITEM NO. | NO. |
| A 300L | | | P6-12 | 19 | N | | 17 | | S3A-11B | 25 | Y | | | |
| A 300R | | | P6-11 | 19 | N | | 17 | | S3A-11A | 25 | Y | | | |
| A 301 | 3 | | P6-15 | 19 | N | | 17 | | S10SW1-NO | 25 | Y | | | |
| A 302 | 3 | | P6-22 | 19 | N | | 17 | | S13SW3-NO | 25 | Y | | | |
| A 303 | 3 | | P6-23 | 19 | N | | 17 | | S12SW1-NO | 25 | Y | | | |
| A 304 | 3 | | P6-24 | 19 | N | | 17 | | S12SW1-NC | 25 | Y | | | |
| A 305 | 3 | | P6-25 | 19 | N | | 17 | | S12SW1-C | 25 | Y | | | |
| A 306 | 3 | | P6-26 | 19 | N | | 17 | | XDS6-A | 25 | Y | | | |
| A 307 | 3 | | P6-27 | 19 | N | | 17 | | S9SW1-NC | 25 | Y | | | |
| A 308 | 3 | | P6-28 | 19 | N | | 18 | | S9SW1-C | 25 | Y | | | |
| A 309 | 3 | | P6-46 | 19 | N | | 18 | | S10SW2-C | 25 | Y | | | |
| A 310 | 3 | | P6-47 | 19 | N | | 17 | | S2A-5B | 25 | Y | | | |
| A 311 | 3 | | P6-51 | 19 | N | | 17 | | S7A-11A | 25 | Y | | | |
| A 312 | 3 | | P6-53 | 19 | N | | 17 | | S6A-11A | 25 | Y | | | |
| A 313 | 3 | | P6-58 | 19 | N | | 17 | | S5SW1-NC | 25 | Y | | | |
| A 314 | 3 | | P7- 1 | 19 | N | | 18 | | S6A- 2A | 25 | Y | | | |
| A 315 | 3 | | P7- 2 | 19 | N | | 18 | | S6A- 3A | 25 | Y | | | |
| A 316 | 3 | | P7- 3 | 19 | N | | 18 | | S6A- 4A | 25 | Y | | | |

1▷ THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2▷ DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

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MIL 2085 - 4-63 WIR

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GBS WIRING HARNESS A F 1900096

| CONDUCTOR | | | FROM | | | | | | TO | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2 | CIRCUIT POINT | 2 | TIN | 2 | ITEM NO. | NO. | CIRCUIT POINT | 2 | TIN | 2 | ITEM NO. | NO. |
| A 337 | 3 | | S4SW1-C | 25 | Y | | | | S4SW2-C | 25 | Y | | | |
| A 338 | 3 | | S4SW1-C | 25 | Y | | | | S13SW1-C | 25 | Y | | | |
| A 339 | 3 | | S4SW1-NO | 25 | Y | | | | XDS2-A | 25 | Y | | | |
| A 340 | 3 | | S4SW2-NO | 25 | Y | | | | S5SW1-C | 25 | Y | | | |
| A 341 | 3 | | S5SW1-C | 25 | Y | | | | S5SW2-C | 25 | Y | | | |
| A 342 | 3 | | S5SW2-NC | 25 | Y | | | | XDS3-A | 25 | Y | | | |
| A 343 | 3 | | S6A- 1A | 25 | Y | | | | XDS1- 1A | 25 | Y | | | |
| A 344 | 3 | | S6A- 2A | 25 | Y | | | | XDS1- 2A | 25 | Y | | | |
| A 345 | 3 | | S6A- 3A | 25 | Y | | | | XDS1- 3A | 25 | Y | | | |
| A 346 | 3 | | S6A- 4A | 25 | Y | | | | XDS1- 4A | 25 | Y | | | |
| A 347 | 3 | | S6A- 5A | 25 | Y | | | | XDS1- 5A | 25 | Y | | | |
| A 348 | 3 | | S6A- 6A | 25 | Y | | | | XDS1- 6A | 25 | Y | | | |
| A 349 | 3 | | S6A- 7A | 25 | Y | | | | XDS1- 7A | 25 | Y | | | |
| A 350 | 3 | | S6A- 8A | 25 | Y | | | | XDS1- 8A | 25 | Y | | | |
| A 351 | 3 | | S6A- 9A | 25 | Y | | | | XDS1- 9A | 25 | Y | | | |
| A 352 | 3 | | S6A-10A | 25 | Y | | | | XDS1-10A | 25 | Y | | | |
| A 353 | 3 | | S7A- 1A | 25 | Y | | | | XDS1- 1B | 25 | Y | | | |
| A 354 | 3 | | S7A- 2A | 25 | Y | | | | XDS1- 2B | 25 | Y | | | |

1▷ THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2▷ DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE-NONE | REV LTR F | SHEET 44 OF 47

MIL 2085 - 4-63 WIR

INCHES 0 1 2 PHOTOGRAPHIC SCALE ONLY

| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH ② | FROM CIRCUIT POINT | ② | T/N | ITEM NO. | TERMINATION SPEC. ① | NO. | TO CIRCUIT POINT | ② | T/N | ITEM NO. | TERMINATION SPEC ① | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 355 | 3 | | S7A- 3A | 25 | Y | | | | XDS1- 3B | 25 | Y | | | |
| A 356 | 3 | | S7A- 4A | 25 | Y | | | | XDS1- 4B | 25 | Y | | | |
| A 357 | 3 | | S7A- 5A | 25 | Y | | | | XDS1- 5B | 25 | Y | | | |
| A 358 | 3 | | S7A- 6A | 25 | Y | | | | XDS1- 6B | 25 | Y | | | |
| A 359 | 3 | | S7A- 7A | 25 | Y | | | | XDS1- 7B | 25 | Y | | | |
| A 360 | 3 | | S7A- 8A | 25 | Y | | | | XDS1- 8B | 25 | Y | | | |
| A 361 | 3 | | S7A- 9A | 25 | Y | | | | XDS1- 9B | 25 | Y | | | |
| A 362 | 3 | | S7A-10A | 25 | Y | | | | XDS1-10B | 25 | Y | | | |
| A 363 | 3 | | S9SW2-C | 25 | Y | | | | S4SW2-C | 25 | Y | | | |
| A 364 | 3 | | S9SW2-C | 25 | Y | | | | S10SW1-C | 25 | Y | | | |
| A 365 | 3 | | S9SW2-NO | 25 | Y | | | | S12SW1-C | 25 | Y | | | |
| A 366 | 3 | | S9SW2-NO | 25 | Y | | | | XDS4-A | 25 | Y | | | |
| A 367 | 3 | | S10SW1-C | 25 | Y | | | | S11- 6A | 25 | Y | | | |
| A 368 | 3 | | S10SW1-NO | 25 | Y | | | | XDS5-A | 25 | Y | | | |
| A 369 | 3 | | S10SW1-NC | 25 | Y | | | | XDS5-B | 25 | Y | | | |
| A 370 | 3 | | S13SW1-C | 25 | Y | | | | XF1- 2 | 25 | Y | | | |
| A 371 | 3 | | S13SW1-NO | 25 | Y | | | | XDS7-A | 25 | Y | | | |
| A 372 | 3 | | S13SW2-C | 25 | Y | | | | S13SW3-C | 25 | Y | | | |

① THE STD CONDUCTOR TERMINATION FIGURES ARE PER
② DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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SIZE A 1900096
SCALE-NONE REV LTR F SHEET 45 OF 47

MIL 2085 - 4-63 WIR

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| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH ② | FROM CIRCUIT POINT | ② | T/N | ITEM NO. | TERMINATION SPEC. ① | NO. | TO CIRCUIT POINT | ② | T/N | ITEM NO. | TERMINATION SPEC ① | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 373 | 3 | | S13SW3-C | 25 | Y | | | | XDS7-G | 25 | Y | | | |
| A 374 | 3 | | XDS1-G | 25 | Y | 20 | | | XDS2-G | 25 | Y | | | |
| A 375 | 3 | | XDS1-G | 25 | Y | | | | XDS5-G | 25 | Y | | | |
| A 376 | 3 | | XDS2-A | 25 | Y | | | | XDS2-C | 25 | Y | | | |
| A 377 | 3 | | XDS2-G | 25 | Y | | | | XDS3-G | 25 | Y | | | |
| A 378 | 3 | | XDS3-A | 25 | Y | | | | XDS3-C | 25 | Y | | | |
| A 379 | 3 | | XDS3-G | 25 | Y | | | | XDS4-G | 25 | Y | | | |
| A 380 | 3 | | XDS4-A | 25 | Y | | | | XDS4-C | 25 | Y | | | |
| A 381 | 3 | | XDS4-G | 25 | Y | | | | XDS6-G | 25 | Y | | | |
| A 382 | 3 | | XDS5-A | 25 | Y | | | | XDS5-D | 25 | Y | | | |
| A 383 | 3 | | XDS5-B | 25 | Y | | | | XDS5-C | 25 | Y | | | |
| A 384 | 3 | | XDS5-G | 25 | Y | | | | XDS7-G | 25 | Y | | | |
| A 385 | 3 | | XDS6-A | 25 | Y | | | | XDS6-C | 25 | Y | | | |
| A 386 | 3 | | XDS6-G | 25 | Y | | | | P6-57 | 19 | N | 18 | | |
| A 387 | 3 | | XDS7-A | 25 | Y | | | | XDS7-C | 25 | Y | | | |
| A 388 | 4 | | E3 | 25 | N | | | | E2 | 25 | N | | | |
| A 389 | 4 | | E4 | 25 | N | | | | E2 | 25 | N | | | |
| A 390 | 4 | | E5 | 25 | N | | | | E2 | 25 | N | | | |

① THE STD CONDUCTOR TERMINATION FIGURES ARE PER
② DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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SCALE-NONE REV LTR F SHEET 46 OF 47

MIL 2085 - 4-63 WIR

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

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| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH ② | FROM CIRCUIT POINT | ② | T/N | ITEM NO. | TERMINATION SPEC. ① | NO. | TO CIRCUIT POINT | ② | T/N | ITEM NO. | TERMINATION SPEC ① | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 412 | 4 | | E27 | 25 | N | | | | E2 | 25 | N | | | |
| A 413 | 4 | | E28 | 25 | N | | | | E2 | 25 | N | | | |
| A 418 | 4 | | P6-59 | 19 | N | | | | E27 | 25 | N | | | |

① THE STD CONDUCTOR TERMINATION FIGURES ARE PER
② DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A 1900096
SCALE-NONE REV LTR F SHEET 47 OF 47

MIL 2085 - 4-63 WIR

|  |  |
|---|---|
| APPLICATION |  |
| NEXT ASSY | USED ON |
| 1900057-011 | 1900057-011 |

| REVISIONS |  |  |  |
|---|---|---|---|
| SYM | DESCRIPTION | DATE | APPROVAL |
| H | REPLACES REV. G WITH CHANGE PER MXC 191409<br>REVISED PER TDR 01869 | 3-12-63 | TP |

# FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 01801 DATE 2 July 63

Ⓗ REPLACES REV G WITH CHANGE

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| REV | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H |
| SHEET | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 |
| REV STATUS REV |  | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H | H |  |  |
| OF SHEETS SHEET |  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |  |  |

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN [illegible] DATE 10 OCT 63
CHECKED [illegible] 14 OCT 63
APPROVAL [illegible] 15 OCT 63
APPROVAL [illegible] 12/2/63
NASA APPROVAL [illegible] 12-3-63
T APPROVAL [illegible] 12/4/63
RACT NAS 9-497

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS A

CODE IDENT NO. | SIZE A | 1900096 | REV H

SCALE — | SHEET 1 OF 50

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REVISION STATUS OF SHEETS

| SH | REV | SH | REV | SH | REV | SH | REV | SH | REV | SH | REV | SH | REV | SH | REV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 | H |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

REVISION

NASA DRAWING NO. 1900096
SHEET 2 OF 50

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PENNANT GENERAL NOTES

NOTE

1 SEE CONDUCTOR CHART

2 SEE CONDUCTOR CHART

3 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

4 MARK CONDUCTOR IDENTIFICATION PER ND1002019.

5 MARK CONDUCTOR IDENTIFICATION ON SINGLE CONDUCTORS PER ND1002019 OMITTING ALL SUFFIX LETTERS EXCEPT A AND B.

6 SPACING OF CONDUCTOR IDENTIFICATION SHALL BE EVERY 1.2 INCHES.

7 SPIRALLING OF THE MARKING IS ALLOWED.

8 MARK SLEEVING WITH REFERENCE DESIGNATION AS SHOWN .12 INCH HIGH, COLOR BLACK PER ND1002019.

9 MARK SLEEVING OF MULTI-CONDUCTORS WITH THE CONDUCTOR NUMBER .12 INCH HIGH, COLOR BLACK, PER ND1002019 WHEN SLEEVING ITEM NUMBERS FOLLOW AN A OR T IN THE ACCESSORIES ITEM NUMBER FIELD.

10 A OR T PREFIX IN THE ACCESSORIES ITEM NUMBER COLUMN INDICATES THE READING POSITION AWAY FROM TERMINATION OR TOWARD TERMINATION RESPECTIVELY. OF THE WIRE MARKER SLEEVE.

11 LACE HARNESS USING ITEM 35.

12 IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (ES-267).

13 SOLDER PER MIL-STD-440 USING ITEMS 31 AND 32.

14 Y OR N IN TINNED COLUMN INDICATES YES OR NO.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE-NONE | REV LTR H | SHEET 3 OF 50

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PENNANT GENERAL NOTES

NOTE

15 A LETTER WITH AN ASTERISK SUFFIX INDICATES A LOWER CASE LETTER.

16 GRID MODULE IS 1 INCH.

17 UNLESS OTHERWISE SPECIFIED ---
FEATURE CENTERLINES ARE LOCATED WITHIN + OR - .25 INCH.
END OF HOOKUP WIRES OR ACCESSORIES ARE LOCATED WITHIN + OR - .12 INCH.

18 VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.

19 THE SUFFIX LETTER OF A CONDUCTOR IDENTIFICATION NUMBER INDICATES CONDUCTOR SHIELDING, COLOR, OR MARKING.
- A - FROM END SHIELD
- B - TO END SHIELD
- E - GRAY
- L - WHITE WITH BLUE TRACER
- R - WHITE WITH RED TRACER
- X - COAX OUTER CONDUCTOR

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE-NONE | REV LTR H | SHEET 4 OF 50

INCHES
0 1 2
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PENNANT LIST OF MATERIALS

| NOTE | ITEM | QTY | PART NO | DESCRIPTION |
|---|---|---|---|---|
| | 1 | 1 | 1900096-004 | WIRE ND1002181 CLASS 4 WHITE JACKET TYPE 2 24AWG (WHT/RED, WHT/BLU) 73 FT TOTAL LENGTH |
| | 2 | 1 | 1900096-003 | WIRE ND1002181 CLASS 4 WHITE JACKET TYPE 1 24AWG (WHITE) 36 INCHES TOTAL LENGTH |
| | 3 | 1 | 1900096-002 | WIRE ND1002181 CLASS 1 TYPE 1 24AWG (WHITE) 668 FT TOTAL LENGTH |
| | 4 | 1 | 1900096-001 | WIRE ND1002181 CLASS 1 TYPE 1 22AWG (WHITE) 228 FT TOTAL LENGTH |
| 18 | 5 | 60 | 1000243-002 | FERRULE, ELECTRICAL CONDUCTOR INNER |
| 18 | 6 | 60 | 1000242-004 | FERRULE, ELECTRICAL CONDUCTOR OUTER |
| 18 | 7 | 25 | 1000243-006 | FERRULE, ELECTRICAL CONDUCTOR INNER |
| 18 | 8 | 25 | 1000242-005 | FERRULE, ELECTRICAL CONDUCTOR OUTER |
| | 9 | | | DELETED |
| | 10 | 110 | 1010490-198 | INSULATION SLEEVING, ELECTRICAL (HEAT SHRINK) |
| | 11 | 1 | 1010490-200 | INSULATION SLEEVING, ELECTRICAL (HEAT SHRINK) |
| | 13 | 6 | 1016006-002 | SPLICE REDUCER, PERMANENT, CRIMP STYLE, COPPER |
| 18 | 14 | 59 | 1015908- 21 | COAXIAL, SOCKET CONTACT |
| 18 | 15 | 59 | 1015908- 41 | COAXIAL, OUTER MALE BODY |
| 18 | 16 | 59 | 1015908- 51 | COAXIAL, HYRING |
| 18 | 17 | 220 | 1015818-424 | CONNECTOR SOCKET CONTACTS |

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A 1900096
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PENNANT LIST OF MATERIALS

| NOTE | ITEM | QTY | PART NO | DESCRIPTION |
|---|---|---|---|---|
| 18 | 18 | 206 | 1015818-420 | CONNECTOR SOCKET CONTACTS |
| | 19 | 6 | 1010490-258 | INSULATION SLEEVING, ELECTRICAL (HEAT SHRINK) |
| 18 | 20 | 2 | 1015902- 46 | TERMINAL LUG |
| | 21 | 1 | MS3127E-24-61P | CONNECTOR, RECEP ELEC |
| | 22 | 1 | MS3127E-24-61PW | CONNECTOR, RECEP ELEC |
| | 23 | 1 | MS3127E-24-61PX | CONNECTOR, RECEP ELEC |
| 18 | 24 | 6 | 1015818-660 | CONNECTOR, PLUG ELEC |
| 18 | 25 | 2 | 1015867-660 | CONNECTOR, RECEP ELEC |
| 18 | 26 | 2 | 1015906-100 | CONNECTOR, RECEP ELEC |
| 18 | 27 | 2 | 1015906-101 | CONNECTOR, RECEP ELEC |
| 18 | 28 | 1 | 1015906-102 | CONNECTOR, RECEP ELEC |
| | 29 | 1 | 1900096-005 | WIRE-COAX MIL-C-17/69A RG188A/U 173 FT TOTAL LG |
| | 30 | 59 | 1010490-202 | INSULATION SLEEVING, ELECTRICAL (HEAT SHRINK) |
| | 31 | AR | QQ-S-571 | SOLDER SN60 (ES-2175 ALLOY 1) |
| | 32 | AR | QQ-S-571 | FLUX TYPE AR (ES-2175 TYPE 1 OR 2) OR MIL-F-14256 FLUX (ES-2798) |
| 18 | 33 | 1 | 1015906-103 | CONNECTOR, RECEP. ELEC. |
| 18 | 34 | 1 | 1015906-104 | CONNECTOR, RECEP. ELEC. |

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A 1900096
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PENNANT GENERAL NOTES

NOTE

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

| APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD. | TOLERANCE WIRE OR CABLE | STRIP WIRE | STRIP JACKET | CUT WIRE | CUT SHIELD |
|---|---|---|---|---|---|
| UNDER 1 INCH | + .06-.00 | +.03-.00 | +.06-.06 | +.06-.06 | +.06-.06 |
| 1 INCH TO 6 INCHES | + .50-.00 | +.06-.00 | +.25-.25 | +.25-.25 | +.25-.25 |
| 6 INCHES TO 6 FEET | +1.00-.00 | | +.50-.50 | +.50-.50 | +.50-.50 |
| OVER 6 FEET | +2.00-.00 | | | | |

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A 1900096
SCALE-NONE REV LTR H SHEET 5 OF 50

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PENNANT LIST OF MATERIALS

| NOTE | ITEM | QTY | PART NO | DESCRIPTION |
|---|---|---|---|---|
| | 35 | 1 | MIL-T-713 | LACING TAPE TYPE P, CLASS 2, BLACK (ES-2732 NO. 18) |

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
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INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

GFL WIRING HARNESS A H 1900096

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | 2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 19 | 3 | | J1-V | 19 | N | | | 1 | P7-15 | 19 | N | | 17 | 16 |
| A 20 | 3 | | J1-W | 19 | N | | | 1 | P7-16 | 19 | N | | 17 | 16 |
| A 21 | 3 | | J1-X | 19 | N | | | 1 | P7-17 | 19 | N | | 17 | 16 |
| A 22 | 3 | | J1-Y | 19 | N | | | 1 | P7-18 | 19 | N | | 17 | 16 |
| A 23 | 3 | | J1-Z | 19 | N | | | 1 | P7-19 | 19 | N | | 17 | 16 |
| A 24 | 3 | | J1-A* | 19 | N | | | 1 | P7-20 | 19 | N | | 17 | 16 |
| A 25 | 3 | | J1-B* | 19 | N | | | 1 | P7-21 | 19 | N | | 17 | 16 |
| A 26 | 3 | | J1-C* | 19 | N | | | 1 | P7-22 | 19 | N | | 17 | 16 |
| A 27 | 3 | | J1-D* | 19 | N | | | 1 | P7-23 | 19 | N | | 17 | 16 |
| A 28 | 3 | | J1-E* | 19 | N | | | 1 | P7-24 | 19 | N | | 17 | 16 |
| A 29 | 3 | | J1-F* | 19 | N | | | 1 | P7-25 | 19 | N | | 17 | 16 |
| A 30 | 3 | | J1-G* | 19 | N | | | 1 | P7-26 | 19 | N | | 17 | 16 |
| A 31 | 3 | | J1-H* | 19 | N | | | 1 | P7-27 | 19 | N | | 17 | 16 |
| A 32 | 3 | | J1-I* | 19 | N | | | 1 | P7-28 | 19 | N | | 17 | 16 |
| A 33 | 3 | | J1-J* | 19 | N | | | 1 | P7-29 | 19 | N | | 18 | 16 |
| A 34 | 3 | | J1-K* | 19 | N | | | 1 | P7-30 | 19 | N | | 18 | 16 |
| A 35 | 3 | | J1-M* | 19 | N | | | 1 | P7-31 | 19 | N | | 18 | 16 |
| A 36 | 3 | | J1-N* | 19 | N | | | 1 | P7-32 | 19 | N | | 18 | 16 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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SIZE A 1900096
SCALE-NONE REV LTR H SHEET 10 OF 50

MIL 2085 - 4-63 WIR

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GFL WIRING HARNESS A H 1900096

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | 2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 37 | 3 | | J1-P* | 19 | N | | | 1 | P7-33 | 19 | N | | 18 | 16 |
| A 38 | 3 | | J1-Q* | 19 | N | | | 1 | P7-34 | 19 | N | | 18 | 16 |
| A 39 | 3 | | J1-R* | 19 | N | | | 1 | P7-35 | 19 | N | | 18 | 16 |
| A 40 | 3 | | J1-S* | 19 | N | | | 1 | P7-36 | 19 | N | | 18 | 16 |
| A 41 | 3 | | J1-T* | 19 | N | | | 1 | P7-37 | 19 | N | | 18 | 16 |
| A 42 | 3 | | J1-U* | 19 | N | | | 1 | S7A- 1A | 25 | Y | | | 31 |
| A 43 | 3 | | J1-V* | 19 | N | | | 1 | P6-51 | 19 | N | | 17 | 15 |
| A 44 | 3 | | J1-W* | 19 | N | | | 1 | S11A- 1A | 25 | Y | | | 28 |
| A 45 | 3 | | J1-X* | 19 | N | | | 1 | S11A- 3A | 25 | Y | | | 28 |
| A 46 | 3 | | J1-Y* | 19 | N | | | 1 | S11A- 5A | 25 | Y | | | 28 |
| A 47 | 3 | | J1-BB | 19 | N | | | 1 | P6-48 | 19 | N | | 17 | 15 |
| A 48 | 3 | | J1-AA | 19 | N | | | 1 | P6-49 | 19 | N | | 17 | 15 |
| A 49 | 3 | | J1-Z* | 19 | N | | | 1 | P6-50 | 19 | N | | 17 | 15 |
| A 50 | 1 | | | | | | A 10 | | | | | | A 10 | |
| | | | | | | | 7 8 | | | | | | | |
| A 50A | 4 | | SHLD A50 | 25 | N | | | | E27 | 25 | N | | | 11 |
| A 50L | | | J1-CC | 19 | N | | | 1 | P6-16 | 19 | N | | 17 | 15 |
| A 50R | | | J1-DD | 19 | N | | | 1 | P6-21 | 19 | N | | 17 | 15 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A 1900096
SCALE-NONE REV LTR H SHEET 11 OF 50

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GFL WIRING HARNESS A H 1900096

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | 2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 1 | 4 | | J1-A | 19 | N | | | 1 | E1 | 25 | | | 20 | 17 |
| A 2 | 3 | | J1-B | 19 | N | | | 1 | P6-56 | 19 | N | | 17 | 15 |
| A 3 | 3 | | J1-C | 19 | N | | | 1 | P6-54 | 19 | N | | 17 | 15 |
| A 4 | 3 | | J1-D | 19 | N | | | 1 | P6-55 | 19 | N | | 17 | 15 |
| A 5 | 3 | | J1-E | 19 | N | | | 1 | S6A- 1A | 25 | Y | | | 32 |
| A 6 | 3 | | J1-F | 19 | N | | | 1 | P7- 1 | 19 | N | | 18 | 16 |
| A 7 | 3 | | J1-G | 19 | N | | | 1 | P7- 2 | 19 | N | | 18 | 16 |
| A 8 | 3 | | J1-H | 19 | N | | | 1 | P7- 3 | 19 | N | | 18 | 16 |
| A 9 | 3 | | J1-J | 19 | N | | | 1 | P7- 4 | 19 | N | | 18 | 16 |
| A 10 | 3 | | J1-K | 19 | N | | | 1 | P7- 5 | 19 | N | | 18 | 16 |
| A 11 | 3 | | J1-L | 19 | N | | | 1 | P7- 6 | 19 | N | | 18 | 16 |
| A 12 | 3 | | J1-M | 19 | N | | | 1 | P7- 7 | 19 | N | | 18 | 16 |
| A 13 | 3 | | J1-N | 19 | N | | | 1 | P7- 8 | 19 | N | | 18 | 16 |
| A 14 | 3 | | J1-P | 19 | N | | | 1 | P7- 9 | 19 | N | | 18 | 16 |
| A 15 | 3 | | J1-R | 19 | N | | | 1 | P7-11 | 19 | N | | 17 | 16 |
| A 16 | 3 | | J1-S | 19 | N | | | 1 | P7-12 | 19 | N | | 17 | 16 |
| A 17 | 3 | | J1-T | 19 | N | | | 1 | P7-13 | 19 | N | | 17 | 16 |
| A 18 | 3 | | J1-U | 19 | N | | | 1 | P7-14 | 19 | N | | 17 | 16 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A 1900096
SCALE-NONE REV LTR H SHEET 9 OF 50

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GFL WIRING HARNESS A H 1900096

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | 2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 51 | 3 | | J2-B | 19 | N | | | 2 | P2-61 | 19 | N | | 18 | 41 |
| A 52 | 3 | | J2-C | 19 | N | | | 2 | P2-62 | 19 | N | | 18 | 41 |
| A 53 | 3 | | J2-D | 19 | N | | | 2 | P2-52 | 19 | N | | 18 | 41 |
| A 54 | 3 | | J2-E | 19 | N | | | 2 | P2-53 | 19 | N | | 18 | 41 |
| A 55 | 3 | | J2-F | 19 | N | | | 2 | P2-54 | 19 | N | | 18 | 41 |
| A 56 | 3 | | J2-G | 19 | N | | | 2 | P2-55 | 19 | N | | 18 | 41 |
| A 57 | 3 | | J2-H | 19 | N | | | 2 | P2-56 | 19 | N | | 18 | 41 |
| A 58 | 3 | | J2-J | 19 | N | | | 2 | P2-57 | 19 | N | | 18 | 41 |
| A 59 | 3 | | J2-K | 19 | N | | | 2 | P2-58 | 19 | N | | 18 | 41 |
| A 60 | 3 | | J2-L | 19 | N | | | 2 | P2-59 | 19 | N | | 18 | 41 |
| A 61 | 3 | | J2-M | 19 | N | | | 2 | P2-60 | 19 | N | | 18 | 41 |
| A 62 | 3 | | J2-N | 19 | N | | | 2 | J12-15 | 19 | N | | 17 | 19 |
| A 63 | 3 | | J2-P | 19 | N | | | 2 | J12-10 | 19 | N | | 18 | 19 |
| A 64 | 3 | | J2-R | 19 | N | | | 2 | P6-46 | 19 | N | | 18 | 15 |
| A 65 | 3 | | J2-S | 19 | N | | | 2 | XF1- 1 | 25 | Y | | | 21 |
| A 66 | 3 | | J2-T | 19 | N | | | 2 | P6-57 | 19 | N | | 17 | 15 |
| A 67 | 3 | | J2-U | 19 | N | | | 2 | J12-29 | 19 | N | | 18 | 19 |
| A 68 | 3 | | J2-V | 19 | N | | | 2 | J12-28 | 19 | N | | 18 | 19 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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SIZE A 1900096
SCALE-NONE REV LTR H SHEET 12 OF 50

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INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

GFL WIRING HARNESS A H 1900096

| CONDUCTOR | | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | 2 | T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 87 | 3 | | J2-S* | 19 | N | | 2 | P6-37 | 19 | N | 17 | 15 |
| A 88 | 3 | | J2-T* | 19 | N | | 2 | P6-38 | 19 | N | 17 | 15 |
| A 89 | 3 | | J2-U* | 19 | N | | 2 | P6-39 | 19 | N | 17 | 15 |
| A 90 | 3 | | J2-V* | 19 | N | | 2 | P6-40 | 19 | N | 17 | 15 |
| A 91 | 3 | | J2-W* | 19 | N | | 2 | P6-41 | 19 | N | 17 | 15 |
| A 92 | 3 | | J2-X* | 19 | N | | 2 | P6-42 | 19 | N | 17 | 15 |
| A 93 | 3 | | J2-Y* | 19 | N | | 2 | P6-43 | 19 | N | 17 | 15 |
| A 94 | 3 | | J2-Z* | 19 | N | | 2 | P6-44 | 19 | N | 17 | 15 |
| A 95 | 3 | | J2-AA | 19 | N | | 2 | P6-45 | 19 | N | 17 | 15 |
| A 96 | 3 | | J2-BB | 19 | N | | 2 | P6-29 | 19 | N | 17 | 15 |
| A 97 | 3 | | J2-CC | 19 | N | | 2 | P6-28 | 19 | N | 17 | 15 |
| A 98 | 3 | | J2-EE | 19 | N | | 2 | P6-31 | 19 | N | 17 | 15 |
| A 99 | 3 | | J2-FF | 19 | N | | 2 | P6-30 | 19 | N | 17 | 15 |
| A 100 | 3 | | J2-GG | 19 | N | | 2 | S13SW2-NO | 25 | Y | | 27 |
| A 101 | 3 | | J2-GG | 19 | N | | 2 | J2-HH | 19 | N | | 2 |
| A 102 | 4 | | J3-A | 19 | N | | 3 | E2 | 25 | N | | 18 |
| A 103 | 1 | | | | | A 10 | | | | | A 10 | |
| | | | | | | 7 8 | | | | | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE-NONE | REV LTR H | SHEET 14 OF 50

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GFL WIRING HARNESS A H 1900096

| CONDUCTOR | | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | 2 | T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 103A | 4 | | SHLD A103 | 25 | N | | | E3 | 25 | N | | 12 |
| A 103L | | | J3-B* | 19 | N | | 3 | S3A- 7B | 25 | Y | | 39 |
| A 103R | | | J3-B | 19 | N | | 3 | S3A- 7A | 25 | Y | | 39 |
| A 104 | 1 | | | | | A 10 | | | | | A 10 | |
| | | | | | | 7 8 | | | | | | |
| A 104A | 4 | | SHLD A104 | 25 | N | | | E3 | 25 | N | | 12 |
| A 104L | | | J3-C* | 19 | N | | 3 | S3A- 6B | 25 | Y | | 39 |
| A 104R | | | J3-C | 19 | N | | 3 | S3A- 6A | 25 | Y | | 39 |
| A 105 | 1 | | | | | A 10 | | | | | A 10 | |
| | | | | | | 7 8 | | | | | | |
| A 105A | 4 | | SHLD A105 | 25 | N | | | E3 | 25 | N | | 12 |
| A 105L | | | J3-D* | 19 | N | | 3 | S3A- 5B | 25 | Y | | 39 |
| A 105R | | | J3-D | 19 | N | | 3 | S3A- 5A | 25 | Y | | 39 |
| A 106 | 1 | | | | | A 10 | | | | | A 10 | |
| | | | | | | 7 8 | | | | | | |
| A 106A | 4 | | SHLD A106 | 25 | N | | | E3 | 25 | N | | 12 |
| A 106L | | | J3-E* | 19 | N | | 3 | S3A- 4B | 25 | Y | | 39 |
| A 106R | | | J3-E | 19 | N | | 3 | S3A- 4A | 25 | Y | | 39 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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SCALE-NONE | REV LTR H | SHEET 15 OF 50

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GFL WIRING HARNESS A H 1900096

| CONDUCTOR | | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | 2 | T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 69 | 3 | | J2-W | 19 | N | | 2 | J12-27 | 19 | N | 18 | 19 |
| A 70 | 3 | | J2-X | 19 | N | | 2 | J12-26 | 19 | N | 18 | 19 |
| A 71 | 3 | | J2-Y | 19 | N | | 2 | J12-16 | 19 | N | 18 | 19 |
| A 72 | 3 | | J2-Z | 19 | N | | 2 | J12-17 | 19 | N | 18 | 19 |
| A 73 | 3 | | J2-A* | 19 | N | | 2 | J12-18 | 19 | N | 18 | 19 |
| A 74 | 3 | | J2-B* | 19 | N | | 2 | J12-19 | 19 | N | 18 | 19 |
| A 75 | 3 | | J2-C* | 19 | N | | 2 | J12-20 | 19 | N | 18 | 19 |
| A 76 | 3 | | J2-D* | 19 | N | | 2 | J12-21 | 19 | N | 18 | 19 |
| A 77 | 3 | | J2-E* | 19 | N | | 2 | J12-22 | 19 | N | 18 | 19 |
| A 78 | 3 | | J2-F* | 19 | N | | 2 | J12-23 | 19 | N | 18 | 19 |
| A 79 | 3 | | J2-G* | 19 | N | | 2 | J12-24 | 19 | N | 18 | 19 |
| A 80 | 3 | | J2-H* | 19 | N | | 2 | J12-30 | 19 | N | 18 | 19 |
| A 81 | 3 | | J2-I* | 19 | N | | 2 | J12-25 | 19 | N | 17 | 19 |
| A 82 | 3 | | J2-M* | 19 | N | | 2 | P6-32 | 19 | N | 17 | 15 |
| A 83 | 3 | | J2-N* | 19 | N | | 2 | P6-33 | 19 | N | 17 | 15 |
| A 84 | 3 | | J2-P* | 19 | N | | 2 | P6-34 | 19 | N | 17 | 15 |
| A 85 | 3 | | J2-Q* | 19 | N | | 2 | P6-35 | 19 | N | 17 | 15 |
| A 86 | 3 | | J2-R* | 19 | N | | 2 | P6-36 | 19 | N | 17 | 15 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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SCALE-NONE | REV LTR H | SHEET 13 OF 50

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GFL WIRING HARNESS A H 1900096

| CONDUCTOR | | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | 2 | T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 107 | 1 | | | | | A 10 | | | | | A 10 | |
| | | | | | | 7 8 | | | | | | |
| A 107A | 4 | | SHLD A107 | 25 | N | | | E3 | 25 | N | | 12 |
| A 107L | | | J3-F* | 19 | N | | 3 | S3A- 3B | 25 | Y | | 39 |
| A 107R | | | J3-F | 19 | N | | 3 | S3A- 3A | 25 | Y | | 39 |
| A 108 | 1 | | | | | A 10 | | | | | A 10 | |
| | | | | | | 7 8 | | | | | | |
| A 108A | 4 | | SHLD A108 | 25 | N | | | E3 | 25 | N | | 12 |
| A 108L | | | J3-G* | 19 | N | | 3 | S3A- 2B | 25 | Y | | 39 |
| A 108R | | | J3-G | 19 | N | | 3 | S3A- 2A | 25 | Y | | 39 |
| A 109 | 1 | | | | | A 10 | | | | | A 10 | |
| | | | | | | 7 8 | | | | | | |
| A 109A | 4 | | SHLD A109 | 25 | N | | | E4 | 25 | N | | 13 |
| A 109L | | | J3-H* | 19 | N | | 3 | P6-14 | 19 | N | 17 | 15 |
| A 109R | | | J3-H | 19 | N | | 3 | P6-13 | 19 | N | 17 | 15 |
| A 110 | 1 | | | | | A 10 | | | | | A 10 | |
| | | | | | | 7 8 | | | | | | |
| A 110A | 4 | | SHLD A110 | 25 | N | | | E4 | 25 | N | | 13 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
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INCHES 0 1 2
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| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | ▷2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | ▷2 | T I N | ▷2 | TERMINATION SPEC. ▷1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | ▷2 | T I N | ▷2 | TERMINATION SPEC ▷1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 7 8 | | | | | | | |
| A 114A | 4 | | SHLD A114 | 25 | N | | | | E5 | 25 | N | | | 14 |
| A 114L | | | J3-P* | 19 | N | | | 3 | S1A- 3B | 25 | Y | | | 38 |
| A 114R | | | J3-P | 19 | N | | | 3 | S1A- 3A | 25 | Y | | | 38 |
| A 115 | 1 | | | | | | A 10 | | | | | | A 10 | |
| | | | | | | | 7 8 | | | | | | | |
| A 115A | 4 | | SHLD A115 | 25 | N | | | | E5 | 25 | N | | | 14 |
| A 115L | | | J3-R* | 19 | N | | | 3 | S8A- 4B | 25 | Y | | | 29 |
| A 115R | | | J3-R | 19 | N | | | 3 | S8A- 4A | 25 | Y | | | 29 |
| A 116 | 1 | | | | | | A 10 | | | | | | A 10 | |
| | | | | | | | 7 8 | | | | | | | |
| A 116A | 4 | | SHLD A116 | 25 | N | | | | E5 | 25 | N | | | 14 |
| A 116L | | | J3-S* | 19 | N | | | 3 | S2B- 4B | 25 | Y | | | 30 |
| A 116R | | | J3-S | 19 | N | | | 3 | S2B- 4A | 25 | Y | | | 30 |
| A 117 | 1 | | | | | | A 10 | | | | | | A 10 | |
| | | | | | | | 7 8 | | | | | | | |
| A 117A | 4 | | SHLD A117 | 25 | N | | | | E5 | 25 | N | | | 14 |
| A 117L | | | J3-T* | 19 | N | | | 3 | S1A- 4B | 25 | Y | | | 38 |

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | ▷2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | ▷2 | T I N | ▷2 | TERMINATION SPEC. ▷1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | ▷2 | T I N | ▷2 | TERMINATION SPEC ▷1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 117R | | | J3-T | 19 | N | | | 3 | S1A- 4A | 25 | Y | | | 38 |
| A 118 | 1 | | | | | | A 10 | | | | | | A 10 | |
| | | | | | | | 7 8 | | | | | | | |
| A 118A | 4 | | SHLD A118 | 25 | N | | | | E5 | 25 | N | | | 14 |
| A 118L | | | J3-U* | 19 | N | | | 3 | S1A- 5B | 25 | Y | | | 38 |
| A 118R | | | J3-U | 19 | N | | | 3 | S1A- 5A | 25 | Y | | | 38 |
| A 119 | 3 | | J3-AA | 19 | N | | | 3 | S2A- 1A | 25 | Y | | | 30 |
| A 120 | 3 | | J3-BB | 19 | N | | | 3 | S2A- 3A | 25 | Y | | | 30 |
| A 121 | 3 | | J3-CC | 19 | N | | | 3 | S2A- 2A | 25 | Y | | | 30 |
| A 122 | 3 | | J3-DD | 19 | N | | | 3 | S2A- 1B | 25 | Y | | | 30 |
| A 123 | 3 | | J3-EE | 19 | N | | | 3 | S2A- 3B | 25 | Y | | | 30 |
| A 124 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 124B | 3 | | P5-66 | 19 | N | | 18 | 43 | SHLD A124 | 25 | N | | | |
| A 124E | | | J4-A1 | 13 | N | | 14 | 4 | P5-15 | 19 | N | | 18 | 43 |
| A 124X | | | J4-A2 | | | 28 | | 4 | SHLD A124 | | | | | |
| A 125 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | ▷2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | ▷2 | T I N | ▷2 | TERMINATION SPEC. ▷1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | ▷2 | T I N | ▷2 | TERMINATION SPEC ▷1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 110L | | | J3-J* | 19 | N | | | 3 | S1A- 6B | 25 | Y | | | 38 |
| A 110R | | | J3-J | 19 | N | | | 3 | S1A- 6A | 25 | Y | | | 38 |
| A 111 | 1 | | | | | | A 10 | | | | | | A 10 | |
| | | | | | | | 7 8 | | | | | | | |
| A 111A | 4 | | SHLD A111 | 25 | N | | | | E4 | 25 | N | | | 13 |
| A 111L | | | J3-K* | 19 | N | | | 3 | S2B- 5B | 25 | Y | | | 30 |
| A 111R | | | J3-K | 19 | N | | | 3 | S2B- 5A | 25 | Y | | | 30 |
| A 112 | 1 | | | | | | A 10 | | | | | | A 10 | |
| | | | | | | | 7 8 | | | | | | | |
| A 112A | 4 | | SHLD A112 | 25 | N | | | | E4 | 25 | N | | | 13 |
| A 112L | | | J3-M* | 19 | N | | | 3 | S8A- 6B | 25 | Y | | | 29 |
| A 112R | | | J3-M | 19 | N | | | 3 | S8A- 5A | 25 | Y | | | 29 |
| A 113 | 1 | | | | | | A 10 | | | | | | A 10 | |
| | | | | | | | 7 8 | | | | | | | |
| A 113A | 4 | | SHLD A113 | 25 | N | | | | E4 | 25 | N | | | 13 |
| A 113L | | | J3-N* | 19 | N | | | 3 | S1A- 1B | 25 | Y | | | 38 |
| A 113R | | | J3-N | 19 | N | | | 3 | S1A- 1A | 25 | Y | | | 38 |
| A 114 | 1 | | | | | | A 10 | | | | | | A 10 | |

▷1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | ▷2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | ▷2 | T I N | ▷2 | TERMINATION SPEC. ▷1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | ▷2 | T I N | ▷2 | TERMINATION SPEC ▷1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 125B | 3 | | P5-64 | 19 | N | | 18 | 43 | SHLD A125 | 25 | N | | | |
| A 125E | | | J4-B1 | 13 | N | | 14 | 4 | P5-13 | 19 | N | | 18 | 43 |
| A 125X | | | J4-B2 | | | 28 | | 4 | SHLD A125 | | | | | |
| A 126 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 126B | 3 | | P5-62 | 19 | N | | 18 | 43 | SHLD A126 | 25 | N | | | |
| A 126E | | | J4-C1 | 13 | N | | 14 | 4 | P5- 9 | 19 | N | | 18 | 43 |
| A 126X | | | J4-C2 | | | 28 | | 4 | SHLD A126 | | | | | |
| A 127 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 127B | 3 | | P5-58 | 19 | N | | 18 | 43 | SHLD A127 | 25 | N | | | |
| A 127E | | | J4-D1 | 13 | N | | 14 | 4 | P5- 7 | 19 | N | | 18 | 43 |
| A 127X | | | J4-D2 | | | 28 | | 4 | SHLD A127 | | | | | |
| A 128 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 128B | 3 | | P5-60 | 19 | N | | 18 | 43 | SHLD A128 | 25 | N | | | |
| A 128E | | | J4-E1 | 13 | N | | 14 | 4 | P5- 5 | 19 | N | | 18 | 43 |
| A 128X | | | J4-E2 | | | 28 | | 4 | SHLD A128 | | | | | |

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INCHES
0 1 2
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| CONDUCTOR | | FROM | | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CIRCUIT POINT | STRIP WIRE OR JACKET | 2 | TERMINATION SPEC. ITEM NO. | NO. | CIRCUIT POINT | STRIP WIRE OR JACKET | TERMINATION SPEC ITEM NO. | NO. |
| A 132E | | J4-J1 | 13N | | 14 | 4 | P5-63 | 19N | 18 | 43 |
| A 132X | | J4-J2 | | 28 | | 4 | SHLD A132 | | | |
| A 133 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 133B | 3 | P1-62 | 19N | | 18 | 40 | SHLD A133 | 25N | | |
| A 133E | | J5-A1 | 13N | | 14 | 5 | P1-25 | 19N | 18 | 40 |
| A 133X | | J5-A2 | | 28 | | 5 | SHLD A133 | | | |
| A 134 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 134B | 3 | P1-64 | 19N | | 18 | 40 | SHLD A134 | 25N | | |
| A 134E | | J5-B1 | 13N | | 14 | 5 | P1-23 | 19N | 18 | 40 |
| A 134X | | J5-B2 | | 28 | | 5 | SHLD A134 | | | |
| A 135 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 135B | 3 | P1-66 | 19N | | 18 | 40 | SHLD A135 | 25N | | |
| A 135E | | J5-C1 | 13N | | 14 | 5 | P1-21 | 19N | 18 | 40 |
| A 135X | | J5-C2 | | 28 | | 5 | SHLD A135 | | | |
| A 136 | 29 | | 56N | | A 30 | | | | A 10 | |

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| CONDUCTOR | | FROM | | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CIRCUIT POINT | STRIP WIRE OR JACKET | 2 | TERMINATION SPEC. ITEM NO. | NO. | CIRCUIT POINT | STRIP WIRE OR JACKET | TERMINATION SPEC ITEM NO. | NO. |
| | | | | | 15 16 | | | | 5 6 | |
| A 136B | 3 | P1-56 | 19N | | 18 | 40 | SHLD A136 | 25N | | |
| A 136E | | J5-D1 | 13N | | 14 | 5 | P1-19 | 19N | 18 | 40 |
| A 136X | | J5-D2 | | 28 | | 5 | SHLD A136 | | | |
| A 137 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 137B | 3 | P1-58 | 19N | | 18 | 40 | SHLD A137 | 25N | | |
| A 137E | | J5-E1 | 13N | | 14 | 5 | P1-17 | 19N | 18 | 40 |
| A 137X | | J5-E2 | | 28 | | 5 | SHLD A137 | | | |
| A 138 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 138B | 3 | P1-60 | 19N | | 18 | 40 | SHLD A138 | 25N | | |
| A 138E | | J5-F1 | 13N | | 14 | 5 | P1-13 | 19N | 18 | 40 |
| A 138X | | J5-F2 | | 28 | | 5 | SHLD A138 | | | |
| A 139 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 139B | 3 | P1-52 | 19N | | 18 | 40 | SHLD A139 | 25N | | |
| A 139E | | J5-G1 | 13N | | 14 | 5 | P1-11 | 19N | 18 | 40 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR | | FROM | | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CIRCUIT POINT | STRIP WIRE OR JACKET | 2 | TERMINATION SPEC. ITEM NO. | NO. | CIRCUIT POINT | STRIP WIRE OR JACKET | TERMINATION SPEC ITEM NO. | NO. |
| A 129 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 129B | 3 | P5-50 | 19N | | 18 | 43 | SHLD A129 | 25N | | |
| A 129E | | J4-F1 | 13N | | 14 | 4 | P5- 3 | 19N | 18 | 43 |
| A 129X | | J4-F2 | | 28 | | 4 | SHLD A129 | | | |
| A 130 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 130B | 3 | P5-52 | 19N | | 18 | 43 | SHLD A130 | 25N | | |
| A 130E | | J4-G1 | 13N | | 14 | 4 | P5- 1 | 19N | 18 | 43 |
| A 130X | | J4-G2 | | 28 | | 4 | SHLD A130 | | | |
| A 131 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 131B | 3 | P5-22 | 19N | | 18 | 43 | SHLD A131 | 25N | | |
| A 131E | | J4-K1 | 13N | | 14 | 4 | XF2- 1 | 25Y | | 23 |
| A 131X | | J4-K2 | | 28 | | 4 | SHLD A131 | | | |
| A 132 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 132B | 3 | P5-14 | 19N | | 18 | 43 | SHLD A132 | 25N | | |

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| CONDUCTOR | | FROM | | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CIRCUIT POINT | STRIP WIRE OR JACKET | 2 | TERMINATION SPEC. ITEM NO. | NO. | CIRCUIT POINT | STRIP WIRE OR JACKET | TERMINATION SPEC ITEM NO. | NO. |
| A 139X | | J5-G2 | | 28 | | 5 | SHLD A139 | | | |
| A 140 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 140B | 3 | P1-53 | 19N | | 18 | 40 | SHLD A140 | 25N | | |
| A 140E | | J5-H1 | 13N | | 14 | 5 | P1- 9 | 19N | 18 | 40 |
| A 140X | | J5-H2 | | 28 | | 5 | SHLD A140 | | | |
| A 141 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 141B | 3 | P1-54 | 19N | | 18 | 40 | SHLD A141 | 25N | | |
| A 141E | | J5-J1 | 13N | | 14 | 5 | P1- 7 | 19N | 18 | 40 |
| A 141X | | J5-J2 | | 28 | | 5 | SHLD A141 | | | |
| A 142 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 142B | 3 | P1-43 | 19N | | 18 | 40 | SHLD A142 | 25N | | |
| A 142E | | J6-A1 | 13N | | 14 | 6 | P1- 5 | 19N | 18 | 40 |
| A 142X | | J6-A2 | | 28 | | 6 | SHLD A142 | | | |
| A 143 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |

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2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR INDIVIDUAL LENGTH | | | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | | | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2 | CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 147 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 147B | 3 | | P1-18 | 19 | N | | 18 | 40 | SHLD A147 | 25 | N | | | |
| A 147E | | | J6-F1 | 13 | N | | 14 | 6 | P1-65 | 19 | N | | 18 | 40 |
| A 147X | | | J6-F2 | | | 28 | | 6 | SHLD A147 | | | | | |
| A 148 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 148B | 3 | | P1-16 | 19 | N | | 18 | 40 | SHLD A148 | 25 | N | | | |
| A 148E | | | J6-G1 | 13 | N | | 14 | 6 | P1-55 | 19 | N | | 18 | 40 |
| A 148X | | | J6-G2 | | | 28 | | 6 | SHLD A148 | | | | | |
| A 149 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 149B | 3 | | P1-14 | 19 | N | | 18 | 40 | SHLD A149 | 25 | N | | | |
| A 149E | | | J6-H1 | 13 | N | | 14 | 6 | P1-57 | 19 | N | | 18 | 40 |
| A 149X | | | J6-H2 | | | 28 | | 6 | SHLD A149 | | | | | |
| A 150 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 150B | 3 | | P6- 3 | 19 | N | | 18 | 15 | SHLD A150 | 25 | N | | | |

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| CONDUCTOR INDIVIDUAL LENGTH | | | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | | | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2 | CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 150E | | | J7-A1 | 13 | N | | 14 | 7 | P6- 4 | 19 | N | | 18 | 15 |
| A 150X | | | J7-A2 | | | 28 | | 7 | SHLD A150 | | | | | |
| A 151 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 151B | 3 | | P2-36 | 19 | N | | 17 | 41 | SHLD A151 | 25 | N | | | |
| A 151E | | | J7-B1 | 13 | N | | 14 | 7 | P2-51 | 19 | N | | 18 | 41 |
| A 151X | | | J7-B2 | | | 28 | | 7 | SHLD A151 | | | | | |
| A 152 | 29 | | | 56 | | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 152B | 3 | | P2-26 | 19 | N | | 17 | 41 | SHLD A152 | 25 | N | | | |
| A 152E | | | J7-C1 | 13 | N | | 14 | 7 | P2-49 | 19 | N | | 18 | 41 |
| A 152X | | | J7-C2 | | | 28 | | 7 | SHLD A152 | | | | | |
| A 153 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 153B | 3 | | P2-28 | 19 | N | | 17 | 41 | SHLD A153 | 25 | N | | | |
| A 153E | | | J7-D1 | 13 | N | | 14 | 7 | P2-48 | 19 | N | | 18 | 41 |
| A 153X | | | J7-D2 | | | 28 | | 7 | SHLD A153 | | | | | |
| A 154 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |

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| CONDUCTOR INDIVIDUAL LENGTH | | | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | | | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2 | CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 143B | 3 | | P1-44 | 19 | N | | 18 | 40 | SHLD A143 | 25 | N | | | |
| A 143E | | | J6-B1 | 13 | N | | 14 | 6 | P1- 3 | 19 | N | | 18 | 40 |
| A 143X | | | J6-B2 | | | 28 | | 6 | SHLD A143 | | | | | |
| A 144 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 144B | 3 | | P1-24 | 19 | N | | 18 | 40 | SHLD A144 | 25 | N | | | |
| A 144E | | | J6-C1 | 13 | N | | 14 | 6 | P1- 1 | 19 | N | | 18 | 40 |
| A 144X | | | J6-C2 | | | 28 | | 6 | SHLD A144 | | | | | |
| A 145 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 145B | 3 | | P1-22 | 19 | N | | 18 | 40 | SHLD A145 | 25 | N | | | |
| A 145E | | | J6-D1 | 13 | N | | 14 | 6 | P1-61 | 19 | N | | 18 | 40 |
| A 145X | | | J6-D2 | | | 28 | | 6 | SHLD A145 | | | | | |
| A 146 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 146B | 3 | | P1-20 | 19 | N | | 18 | 40 | SHLD A146 | 25 | N | | | |
| A 146E | | | J6-E1 | 13 | N | | 14 | 6 | P1-63 | 19 | N | | 18 | 40 |
| A 146X | | | J6-E2 | | | 28 | | 6 | SHLD A146 | | | | | |

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2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR INDIVIDUAL LENGTH | | | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | | | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2 | CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 154B | 3 | | P2-30 | 19 | N | | 17 | 41 | SHLD A154 | 25 | N | | | |
| A 154E | | | J7-E1 | 13 | N | | 14 | 7 | P2-44 | 19 | N | | 18 | 41 |
| A 154X | | | J7-E2 | | | 28 | | 7 | SHLD A154 | | | | | |
| A 155 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 155B | 3 | | P2-20 | 19 | N | | 17 | 41 | SHLD A155 | 25 | N | | | |
| A 155E | | | J7-F1 | 13 | N | | 14 | 7 | P2-43 | 19 | N | | 18 | 41 |
| A 155X | | | J7-F2 | | | 28 | | 7 | SHLD A155 | | | | | |
| A 156 | 29 | | | | | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 156B | 3 | | P2-22 | 19 | N | | 17 | 41 | SHLD A156 | 25 | N | | | |
| A 156E | | | J7-G1 | 13 | N | | 14 | 7 | P2-39 | 19 | N | | 18 | 41 |
| A 156X | | | J7-G2 | | | 28 | | 7 | SHLD A156 | | | | | |
| A 157 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 157B | 3 | | P2-23 | 19 | N | | 17 | 41 | SHLD A157 | 25 | N | | | |
| A 157E | | | J7-H1 | 13 | N | | 14 | 7 | P2-38 | 19 | N | | 18 | 41 |

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2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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0 1 2
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| CONDUCTOR | | | FROM | | | | | | TO | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | ▷2 | CIRCUIT POINT | ▷2 | TIN | ▷2 | TERMINATION SPEC. ▷1 ITEM NO. | NO. | CIRCUIT POINT | ▷2 | TIN | ▷2 | TERMINATION SPEC ▷1 ITEM NO. | NO. |
| A 161B | 3 | | P2-15 | 19 | N | | 17 | 41 | SHLD A161 | 25 | N | | | |
| A 161E | | | J8-C1 | 13 | N | | 14 | 8 | P2-31 | 19 | N | | 18 | 41 |
| A 161X | | | J8-C2 | | | 28 | | 8 | SHLD A161 | | | | | |
| A 162 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 162B | 3 | | P2-50 | 19 | N | | 17 | 41 | SHLD A162 | 25 | N | | | |
| A 162E | | | J8-D1 | 13 | N | | 14 | 8 | P2-34 | 19 | N | | 18 | 41 |
| A 162X | | | J8-D2 | | | 28 | | 8 | SHLD A162 | | | | | |
| A 163 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 163B | 3 | | P2-47 | 19 | N | | 17 | 41 | SHLD A163 | 25 | N | | | |
| A 163E | | | J8-E1 | 13 | N | | 14 | 8 | P2-35 | 19 | N | | 18 | 41 |
| A 163X | | | J8-E2 | | | 28 | | 8 | SHLD A163 | | | | | |
| A 164 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 164B | 3 | | P2-46 | 19 | N | | 17 | 41 | SHLD A164 | 25 | N | | | |
| A 164E | | | J8-F1 | 13 | N | | 14 | 8 | P2-25 | 19 | N | | 18 | 41 |
| A 164X | | | J8-F2 | | | 28 | | 8 | SHLD A164 | | | | | |

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▷2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR | | | FROM | | | | | | TO | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | ▷2 | CIRCUIT POINT | ▷2 | TIN | ▷2 | TERMINATION SPEC. ▷1 ITEM NO. | NO. | CIRCUIT POINT | ▷2 | TIN | ▷2 | TERMINATION SPEC ▷1 ITEM NO. | NO. |
| A 165 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 165B | 3 | | P2-45 | 19 | N | | 17 | 41 | SHLD A165 | 25 | N | | | |
| A 165E | | | J8-G1 | 13 | N | | 14 | 8 | P2-27 | 19 | N | | 18 | 41 |
| A 165X | | | J8-G2 | | | 28 | | 8 | SHLD A165 | | | | | |
| A 166 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 166B | 3 | | P2-42 | 19 | N | | 17 | 41 | SHLD A166 | 25 | N | | | |
| A 166E | | | J8-H1 | 13 | N | | 14 | 8 | P2-29 | 19 | N | | 18 | 41 |
| A 166X | | | J8-H2 | | | 28 | | 8 | SHLD A166 | | | | | |
| A 167 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 167B | 3 | | P2-41 | 19 | N | | 17 | 41 | SHLD A167 | 25 | N | | | |
| A 167E | | | J8-J1 | 13 | N | | 14 | 8 | P2-19 | 19 | N | | 18 | 41 |
| A 167X | | | J8-J2 | | | 28 | | 8 | SHLD A167 | | | | | |
| A 168 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 168B | 3 | | P6- 7 | 19 | N | | 18 | 15 | SHLD A168 | 25 | N | | | |

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| CONDUCTOR | | | FROM | | | | | | TO | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | ▷2 | CIRCUIT POINT | ▷2 | TIN | ▷2 | TERMINATION SPEC. ▷1 ITEM NO. | NO. | CIRCUIT POINT | ▷2 | TIN | ▷2 | TERMINATION SPEC ▷1 ITEM NO. | NO. |
| A 157X | | | J7-H2 | | | 28 | | 7 | SHLD A157 | | | | | |
| A 158 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 158B | 3 | | P2-24 | 19 | N | | 17 | 41 | SHLD A158 | 25 | N | | | |
| A 158E | | | J7-J1 | 13 | N | | 14 | 7 | P2-37 | 19 | N | | 18 | 41 |
| A 158X | | | J7-J2 | | | 28 | | 7 | SHLD A158 | | | | | |
| A 159 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 159B | 3 | | P2-13 | 19 | N | | 17 | 41 | SHLD A159 | 25 | N | | | |
| A 159E | | | J8-A1 | 13 | N | | 14 | 8 | P2-33 | 19 | N | | 18 | 41 |
| A 159X | | | J8-A2 | | | 28 | | 8 | SHLD A159 | | | | | |
| A 160 | 29 | | | 56 | | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 160B | 3 | | P2-14 | 19 | N | | 17 | 41 | SHLD A160 | 25 | N | | | |
| A 160E | | | J8-B1 | 13 | N | | 14 | 8 | P2-32 | 19 | N | | 18 | 41 |
| A 160X | | | J8-B2 | | | 28 | | 8 | SHLD A160 | | | | | |
| A 161 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |

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| CONDUCTOR | | | FROM | | | | | | TO | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | ▷2 | CIRCUIT POINT | ▷2 | TIN | ▷2 | TERMINATION SPEC. ▷1 ITEM NO. | NO. | CIRCUIT POINT | ▷2 | TIN | ▷2 | TERMINATION SPEC ▷1 ITEM NO. | NO. |
| A 168E | | | J9-A1 | 13 | N | | 14 | 9 | P6- 8 | 19 | N | | 18 | 15 |
| A 168X | | | J9-A2 | | | 28 | | 9 | SHLD A168 | | | | | |
| A 169 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 169B | 3 | | P6-10 | 19 | N | | 18 | 15 | SHLD A169 | 25 | N | | | |
| A 169E | | | J9-B1 | 13 | N | | 14 | 9 | P6- 9 | 19 | N | | 18 | 15 |
| A 169X | | | J9-B2 | | | 28 | | 9 | SHLD A169 | | | | | |
| A 170 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 170B | 3 | | P5-12 | 19 | N | | 18 | 43 | SHLD A170 | 25 | N | | | |
| A 170E | | | J9-C1 | 13 | N | | 14 | 9 | P5-61 | 19 | N | | 18 | 43 |
| A 170X | | | J9-C2 | | | | 28 | 9 | SHLD A170 | | | | | |
| A 171 | 29 | | | 56 | N | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 171B | 3 | | P5-11 | 19 | N | | 18 | 43 | SHLD A171 | 25 | N | | | |
| A 171E | | | J9-D1 | 13 | N | | 14 | 9 | P5-55 | 19 | N | | 18 | 43 |
| A 171X | | | J9-D2 | | | 28 | | 9 | SHLD A171 | | | | | |
| A 172 | 29 | | | 56 | | | A 30 | | | | | | A 10 | |

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| CONDUCTOR | | | FROM | | | | | | | TO | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC. 1 ITEM NO. | | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC 1 ITEM NO. | | NO. |
| A 175X | | | J9-H2 | | | 28 | | | 9 | SHLD A175 | | | | | | |
| A 176 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 176B | 3 | | P3-11 | 19 | N | | 18 | | 42 | SHLD A176 | 25 | N | | | | |
| A 176E | | | J10-A1 | 13 | N | | 14 | | 10 | P3-58 | 19 | N | | 18 | | 42 |
| A 176X | | | J10-A2 | | | 28 | | | 10 | SHLD A176 | | | | | | |
| A 177 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 177B | 3 | | P3- 9 | 19 | N | | 18 | | 42 | SHLD A177 | 25 | N | | | | |
| A 177E | | | J10-B1 | 13 | N | | 14 | | 10 | P3-50 | 19 | N | | 18 | | 42 |
| A 177X | | | J10-B2 | | | 28 | | | 10 | SHLD A177 | | | | | | |
| A 178 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 178B | 3 | | P3- 7 | 19 | N | | 18 | | 42 | SHLD A178 | 25 | N | | | | |
| A 178E | | | J10-C1 | 13 | N | | 14 | | 10 | P3-52 | 19 | N | | 18 | | 42 |
| A 178X | | | J10-C2 | | | 28 | | | 10 | SHLD A178 | | | | | | |
| A 179 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |

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| CONDUCTOR | | | FROM | | | | | | | TO | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC. 1 ITEM NO. | | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC 1 ITEM NO. | | NO. |
| A 179B | 3 | | P3- 5 | 19 | N | | 18 | | 42 | SHLD A179 | 25 | N | | | | |
| A 179E | | | J10-D1 | 13 | N | | 14 | | 10 | P3-54 | 19 | N | | 18 | | 42 |
| A 179X | | | J10-D2 | | | 28 | | | 10 | SHLD A179 | | | | | | |
| A 180 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 180B | 3 | | P3- 3 | 19 | N | | 18 | | 42 | SHLD A180 | 25 | N | | | | |
| A 180E | | | J10-E1 | 13 | N | | 14 | | 10 | P3-44 | 19 | N | | 18 | | 42 |
| A 180X | | | J10-E2 | | | 28 | | | 10 | SHLD A180 | | | | | | |
| A 181 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 181B | 3 | | P3- 1 | 19 | N | | 17 | | 42 | SHLD A181 | 25 | N | | | | |
| A 181E | | | J10-F1 | 13 | N | | 14 | | 10 | P3-46 | 19 | N | | 17 | | 42 |
| A 181X | | | J10-F2 | | | 28 | | | 10 | SHLD A181 | | | | | | |
| A 182 | 3 | | J11- 1 | 19 | N | | 17 | | 20 | P1-25 | 19 | N | | | | 40 |
| A 183 | 3 | | J11- 2 | 19 | N | | 17 | | 20 | P3-24 | 19 | N | | 17 | | 42 |
| A 184 | 3 | | J11- 3 | 19 | N | | 17 | | 20 | P2-51 | 19 | N | | | | 41 |
| A 185 | 3 | | J11- 4 | 19 | N | | 17 | | 20 | P1-23 | 19 | N | | | | 40 |
| A 186 | 3 | | J11- 5 | 19 | N | | 17 | | 20 | P3-22 | 19 | N | | 17 | | 42 |

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| CONDUCTOR | | | FROM | | | | | | | TO | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC. 1 ITEM NO. | | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC 1 ITEM NO. | | NO. |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 172B | 3 | | P5- 8 | 19 | N | | 18 | | 43 | SHLD A172 | 25 | N | | | | |
| A 172E | | | J9-E1 | 13 | N | | 14 | | 9 | P5-57 | 19 | N | | 18 | | 43 |
| A 172X | | | J9-E2 | | | 28 | | | 9 | SHLD A172 | | | | | | |
| A 173 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 173B | 3 | | P5- 6 | 19 | N | | 18 | | 43 | SHLD A173 | 25 | N | | | | |
| A 173E | | | J9-F1 | 13 | N | | 14 | | 9 | P5-59 | 19 | N | | 18 | | 43 |
| A 173X | | | J9-F2 | | | 28 | | | 9 | SHLD A173 | | | | | | |
| A 174 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 174B | 3 | | P5- 4 | 19 | N | | 18 | | 43 | SHLD A174 | 25 | N | | | | |
| A 174E | | | J9-G1 | 13 | N | | 14 | | 9 | P5-49 | 19 | N | | 18 | | 43 |
| A 174X | | | J9-G2 | | | 28 | | | 9 | SHLD A174 | | | | | | |
| A 175 | 29 | | | 56 | N | | A | 30 | | | | | | A | 10 | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | |
| A 175B | 3 | | P5- 2 | 19 | N | | 18 | | 43 | SHLD A175 | 25 | N | | | | |
| A 175E | | | J9-H1 | 13 | N | | 14 | | 9 | P5-51 | 19 | N | | 18 | | 43 |

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| CONDUCTOR | | | FROM | | | | | | | TO | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC. 1 ITEM NO. | | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC 1 ITEM NO. | | NO. |
| A 187 | 3 | | J11- 6 | 19 | N | | 17 | | 20 | P2-49 | 19 | N | | | | 41 |
| A 188 | 3 | | J11- 7 | 19 | N | | 17 | | 20 | P1-21 | 19 | N | | | | 40 |
| A 189 | 3 | | J11- 8 | 19 | N | | 17 | | 20 | P3-20 | 19 | N | | 17 | | 42 |
| A 190 | 3 | | J11- 9 | 19 | N | | 17 | | 20 | P2-48 | 19 | N | | | | 41 |
| A 191 | 3 | | J11-10 | 19 | N | | 17 | | 20 | P1-19 | 19 | N | | | | 40 |
| A 192 | 3 | | J11-11 | 19 | N | | 17 | | 20 | P3-18 | 19 | N | | 17 | | 42 |
| A 193 | 3 | | J11-12 | 19 | N | | 17 | | 20 | P2-44 | 19 | N | | | | 41 |
| A 194 | 3 | | J11-13 | 19 | N | | 17 | | 20 | P1-17 | 19 | N | | | | 40 |
| A 195 | 3 | | J11-14 | 19 | N | | 17 | | 20 | P3-16 | 19 | N | | 17 | | 42 |
| A 196 | 3 | | J11-15 | 19 | N | | 17 | | 20 | P2-43 | 19 | N | | | | 41 |
| A 197 | 3 | | J11-16 | 19 | N | | 17 | | 20 | P1-13 | 19 | N | | | | 40 |
| A 198 | 3 | | J11-17 | 19 | N | | 17 | | 20 | P3-14 | 19 | N | | 17 | | 42 |
| A 199 | 3 | | J11-18 | 19 | N | | 17 | | 20 | P2-39 | 19 | N | | | | 41 |
| A 200 | 3 | | J11-19 | 19 | N | | 17 | | 20 | P1-11 | 19 | N | | | | 40 |
| A 201 | 3 | | J11-20 | 19 | N | | 17 | | 20 | P3-12 | 19 | N | | 17 | | 42 |
| A 202 | 3 | | J11-21 | 19 | N | | 17 | | 20 | P2-38 | 19 | N | | | | 41 |
| A 203 | 3 | | J11-22 | 19 | N | | 17 | | 20 | P1- 9 | 19 | N | | | | 40 |
| A 204 | 3 | | J11-23 | 19 | N | | 17 | | 20 | P3-10 | 19 | N | | 17 | | 42 |

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SIZE A 1900096
SCALE - NONE REV LTR H SHEET 36 OF 50

MIL 2085 - 4-63 WIR

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

GFL WIRING HARNESS A H 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | FROM STRIP WIRE OR JACKET | FROM TIN | FROM TERMINATION SPEC. ITEM NO. | FROM NO. | TO CIRCUIT POINT | TO STRIP WIRE OR JACKET | TO TIN | TO TERMINATION SPEC ITEM NO. | TO NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A 223 | 3 | J11-42 | 19 | N | 17 | 20 | P2-25 | 19 | N | | 41 |
| A 224 | 3 | J11-43 | 19 | N | 17 | 20 | P1-65 | 19 | N | | 40 |
| A 225 | 3 | J11-44 | 19 | N | 17 | 20 | P3-64 | 19 | N | 17 | 42 |
| A 226 | 3 | J11-45 | 19 | N | 17 | 20 | P2-27 | 19 | N | | 41 |
| A 227 | 3 | J11-46 | 19 | N | 17 | 20 | P1-55 | 19 | N | | 40 |
| A 228 | 3 | J11-47 | 19 | N | 17 | 20 | P3-66 | 19 | N | 17 | 42 |
| A 229 | 3 | J11-48 | 19 | N | 17 | 20 | P2-29 | 19 | N | | 41 |
| A 230 | 3 | J11-49 | 19 | N | 17 | 20 | P1-57 | 19 | N | | 40 |
| A 231 | 3 | J11-50 | 19 | N | 17 | 20 | P3-56 | 19 | N | 17 | 42 |
| A 232 | 3 | J11-51 | 19 | N | 17 | 20 | P2-19 | 19 | N | | 41 |
| A 236 | 3 | J12- 1 | 19 | N | 17 | 19 | P2-52 | 19 | N | 18 | 41 |
| A 237 | 3 | J12- 2 | 19 | N | 17 | 19 | P2-53 | 19 | N | 18 | 41 |
| A 238 | 3 | J12- 3 | 19 | N | 17 | 19 | P2-54 | 19 | N | 18 | 41 |
| A 239 | 3 | J12- 4 | 19 | N | 17 | 19 | P2-55 | 19 | N | 18 | 41 |
| A 240 | 3 | J12- 5 | 19 | N | 17 | 19 | P2-56 | 19 | N | 18 | 41 |
| A 241 | 3 | J12- 6 | 19 | N | 17 | 19 | P2-57 | 19 | N | 18 | 41 |
| A 242 | 3 | J12- 7 | 19 | N | 17 | 19 | P2-58 | 19 | N | 18 | 41 |
| A 243 | 3 | J12- 8 | 19 | N | 17 | 19 | P2-59 | 19 | N | 18 | 41 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE-NONE | REV LTR H | SHEET 38 OF 50

MIL 2085 - 4-63 WIR

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GFL WIRING HARNESS A H 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | FROM STRIP WIRE OR JACKET | FROM TIN | FROM TERMINATION SPEC. ITEM NO. | FROM NO. | TO CIRCUIT POINT | TO STRIP WIRE OR JACKET | TO TIN | TO TERMINATION SPEC ITEM NO. | TO NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A 244 | 3 | J12- 9 | 19 | N | 17 | 19 | P2-60 | 19 | N | 18 | 41 |
| A 245 | 3 | J12-10 | 19 | N | 18 | 19 | P7-38 | 19 | N | 17 | 16 |
| A 246 | 3 | J12-11 | 19 | N | 18 | 19 | P2-61 | 19 | N | 18 | 41 |
| A 247 | 3 | J12-11 | 19 | N | 18 | 19 | S2A- 1A | 25 | Y | | 30 |
| A 248 | 3 | J12-12 | 19 | N | 18 | 19 | P2-62 | 19 | N | 18 | 41 |
| A 249 | 3 | J12-12 | 19 | N | 18 | 19 | S2A- 3A | 25 | Y | | 30 |
| A 250 | 3 | J12-16 | 19 | N | 18 | 19 | P3-48 | 19 | N | 18 | 42 |
| A 251 | 3 | J12-17 | 19 | N | 18 | 19 | P3-37 | 19 | N | 18 | 42 |
| A 252 | 3 | J12-18 | 19 | N | 18 | 19 | P3-38 | 19 | N | 18 | 42 |
| A 253 | 3 | J12-19 | 19 | N | 18 | 19 | P3-39 | 19 | N | 18 | 42 |
| A 254 | 3 | J12-20 | 19 | N | 18 | 19 | P3-40 | 19 | N | 18 | 42 |
| A 255 | 3 | J12-21 | 19 | N | 18 | 19 | P3-41 | 19 | N | 18 | 42 |
| A 256 | 3 | J12-22 | 19 | N | 18 | 19 | P3-42 | 19 | N | 18 | 42 |
| A 257 | 3 | J12-23 | 19 | N | 18 | 19 | P3-32 | 19 | N | 18 | 42 |
| A 258 | 3 | J12-24 | 19 | N | 18 | 19 | P3-33 | 19 | N | 18 | 42 |
| A 259 | 3 | J12-26 | 19 | N | 18 | 19 | P3-34 | 19 | N | 17 | 42 |
| A 260 | 3 | J12-27 | 19 | N | 18 | 19 | P3-31 | 19 | N | 17 | 42 |
| A 261 | 3 | J12-28 | 19 | N | 18 | 19 | P5-40 | 19 | N | 17 | 43 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE-NONE | REV LTR H | SHEET 39 OF 50

MIL 2085 - 4-63 WIR

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GFL WIRING HARNESS A H 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | FROM STRIP WIRE OR JACKET | FROM TIN | FROM TERMINATION SPEC. ITEM NO. | FROM NO. | TO CIRCUIT POINT | TO STRIP WIRE OR JACKET | TO TIN | TO TERMINATION SPEC ITEM NO. | TO NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A 205 | 3 | J11-24 | 19 | N | 17 | 20 | P2-37 | 19 | N | | 41 |
| A 206 | 3 | J11-25 | 19 | N | 17 | 20 | P1- 7 | 19 | N | | 40 |
| A 207 | 3 | J11-26 | 19 | N | 17 | 20 | P3- 8 | 19 | N | 17 | 42 |
| A 208 | 3 | J11-27 | 19 | N | 17 | 20 | P2-33 | 19 | N | | 41 |
| A 209 | 3 | J11-28 | 19 | N | 17 | 20 | P1- 5 | 19 | N | | 40 |
| A 210 | 3 | J11-29 | 19 | N | 17 | 20 | P3- 6 | 19 | N | 17 | 42 |
| A 211 | 3 | J11-30 | 19 | N | 17 | 20 | P2-32 | 19 | N | | 41 |
| A 212 | 3 | J11-31 | 19 | N | 17 | 20 | P1- 3 | 19 | N | | 40 |
| A 213 | 3 | J11-32 | 19 | N | 17 | 20 | P3- 4 | 19 | N | 17 | 42 |
| A 214 | 3 | J11-33 | 19 | N | 17 | 20 | P2-31 | 19 | N | | 41 |
| A 215 | 3 | J11-34 | 19 | N | 17 | 20 | P1- 1 | 19 | N | | 40 |
| A 216 | 3 | J11-35 | 19 | N | 17 | 20 | P3- 2 | 19 | N | 17 | 42 |
| A 217 | 3 | J11-36 | 19 | N | 17 | 20 | P2-34 | 19 | N | | 41 |
| A 218 | 3 | J11-37 | 19 | N | 17 | 20 | P1-61 | 19 | N | | 40 |
| A 219 | 3 | J11-38 | 19 | N | 17 | 20 | P3-61 | 19 | N | 17 | 42 |
| A 220 | 3 | J11-39 | 19 | N | 17 | 20 | P2-35 | 19 | N | | 41 |
| A 221 | 3 | J11-40 | 19 | N | 17 | 20 | P1-63 | 19 | N | | 40 |
| A 222 | 3 | J11-41 | 19 | N | 17 | 20 | P3-62 | 19 | N | 17 | 42 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE-NONE | REV LTR H | SHEET 37 OF 50

MIL 2085 - 4-63 WIR

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GFL WIRING HARNESS A H 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | FROM STRIP WIRE OR JACKET | FROM TIN | FROM TERMINATION SPEC. ITEM NO. | FROM NO. | TO CIRCUIT POINT | TO STRIP WIRE OR JACKET | TO TIN | TO TERMINATION SPEC ITEM NO. | TO NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A 262 | 3 | J12-29 | 19 | N | 18 | 19 | P5-18 | 19 | N | 17 | 43 |
| A 263 | 3 | J12-30 | 19 | N | 18 | 19 | P7-10 | 19 | N | 17 | 16 |
| A 264 | 3 | P1-14 | 19 | N | | 40 | P3-15 | 19 | N | 17 | 42 |
| A 265 | 3 | P1-16 | 19 | N | | 40 | P3-17 | 19 | N | 17 | 42 |
| A 266 | 3 | P1-18 | 19 | N | 18 | 40 | P3-19 | 19 | N | 17 | 42 |
| A 267 | 3 | P1-20 | 19 | N | | 40 | P3-21 | 19 | N | 17 | 42 |
| A 268 | 3 | P1-22 | 19 | N | | 40 | P3-23 | 19 | N | 17 | 42 |
| A 269 | 3 | P1-24 | 19 | N | | 40 | P3-25 | 19 | N | 17 | 42 |
| A 270 | 3 | P1-43 | 19 | N | | 40 | P3-45 | 19 | N | 17 | 42 |
| A 271 | 3 | P1-44 | 19 | N | | 40 | P3-47 | 19 | N | 17 | 42 |
| A 272 | 1 | | | | A 10 | | | | | A 10 | |
| | | | | | | | | | | 7 8 | |
| A 272B | 4 | E27 | 25 | N | | 11 | SHLD A272 | 25 | N | | |
| A 272L | | P1-15 | 19 | N | 17 | 40 | P6- 2 | 19 | N | 17 | 15 |
| A 272R | | P1-50 | 19 | N | 17 | 40 | P6- 1 | 19 | N | 17 | 15 |
| A 273 | 3 | P1-52 | 19 | N | | 40 | P3-51 | 19 | N | 17 | 42 |
| A 274 | 3 | P1-53 | 19 | N | | 40 | P3-53 | 19 | N | 17 | 42 |
| A 275 | 3 | P1-54 | 19 | N | | 40 | P3-43 | 19 | N | 17 | 42 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE-NONE | REV LTR H | SHEET 40 OF 50

MIL 2085 - 4-63 WIR

INCHES

0 1 2

PHOTOGRAPHIC SCALE ONLY

GFL WIRING HARNESS A H 1900096

| CONDUCTOR | | | FROM | | | | | | | TO | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH | | | CUT WIRE OR SHIELD | | | TERMINATION SPEC. 1 | | | | CUT WIRE OR SHIELD | | | TERMINATION SPEC 1 | | | |
| NUMBER | ITEM NO. | 2 | STRIP WIRE OR JACKET<br>CIRCUIT POINT | 2 | TIN | ITEM NO. | | | NO. | STRIP WIRE OR JACKET<br>CIRCUIT POINT | 2 | TIN | ITEM NO. | | | NO. |
| A 290 | 3 | | P3-39 | 19 | N | 18 | | | 42 | P5-46 | 19 | N | 17 | | | 43 |
| A 291 | 3 | | P3-40 | 19 | N | 18 | | | 42 | P5-47 | 19 | N | 17 | | | 43 |
| A 292 | 3 | | P3-41 | 19 | N | 18 | | | 42 | P5-48 | 19 | N | 17 | | | 43 |
| A 293 | 3 | | P3-42 | 19 | N | 18 | | | 42 | P5-37 | 19 | N | 17 | | | 43 |
| A 294 | 3 | | P3-48 | 19 | N | 18 | | | 42 | P5-43 | 19 | N | 17 | | | 43 |
| A 296 | | | P3-60 | 19 | N | 17 | | | 42 | P6-17 | 19 | N | 17 | | | 15 |
| A 297 | 3 | | P5-17 | 19 | N | 17 | | | 43 | S10SW2-NO | 25 | Y | | | | 26 |
| A 298 | 1 | | | | | A | 10 | | | | | | A | 10 | | |
| | | | | | | | | | | | | | 7 | 8 | | |
| A 298B | 4 | | E27 | 25 | N | | | | 11 | SHLD A298 | 25 | N | | | | |
| A 298L | | | P5-10 | 19 | N | 17 | | | 43 | P6-20 | 19 | N | 17 | | | 15 |
| A 298R | | | P5-56 | 19 | N | 17 | | | 43 | P6-18 | 19 | N | 17 | | | 15 |
| A 299 | 2 | | | | | 11 | | | | | | | 5 | 6 | 10 | |
| A 299B | 4 | | E28 | 25 | N | | | | 33 | SHLD A299 | 25 | N | | | | |
| A 299W | | | P5-53 | 19 | N | 17 | | | 43 | XF2- 2 | 25 | Y | | | | 24 |
| A 300 | 1 | | | | | A | 10 | | | | | | A | 10 | | |
| | | | | | | 7 | 8 | | | | | | | | | |
| A 300A | 4 | | SHLD A300 | 25 | N | | | | | E27 | 25 | N | | | | 11 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

| MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096 |
|---|---|---|
| SCALE-NONE | REV LTR H | SHEET 42 OF 50 |

MIL 2085 - 4-63 WIR

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GFL WIRING HARNESS A H 1900096

| CONDUCTOR | | | FROM | | | | | | | TO | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH | | | CUT WIRE OR SHIELD | | | TERMINATION SPEC. 1 | | | | CUT WIRE OR SHIELD | | | TERMINATION SPEC 1 | | | |
| NUMBER | ITEM NO. | 2 | STRIP WIRE OR JACKET<br>CIRCUIT POINT | 2 | TIN | ITEM NO. | | | NO. | STRIP WIRE OR JACKET<br>CIRCUIT POINT | 2 | TIN | ITEM NO. | | | NO. |
| A 300L | | | P6-12 | 19 | N | 17 | | | 15 | S3A-11B | 25 | Y | | | | 39 |
| A 300R | | | P6-11 | 19 | N | 17 | | | 15 | S3A-11A | 25 | Y | | | | 39 |
| A 301 | 3 | | P6-15 | 19 | N | 17 | | | 15 | S10SW1-NO | 25 | Y | | | | 26 |
| A 302 | 3 | | P6-22 | 19 | N | 17 | | | 15 | S13SW3-NO | 25 | Y | | | | 27 |
| A 303 | 3 | | P6-23 | 19 | N | 17 | | | 15 | S12SW1-NO | 25 | Y | | | | 25 |
| A 304 | 3 | | P6-24 | 19 | N | 17 | | | 15 | S12SW1-NC | 25 | Y | | | | 25 |
| A 305 | 3 | | P6-25 | 19 | N | 17 | | | 15 | S12SW1-C | 25 | Y | | | | 25 |
| A 306 | 3 | | P6-26 | 19 | N | 17 | | | 15 | XDS6-A | 25 | Y | | | | 25 |
| A 307 | 3 | | P6-27 | 19 | N | 17 | | | 15 | S9SW1-NC | 25 | Y | | | | 25 |
| A 308 | 3 | | P6-28 | 19 | N | 18 | | | 15 | S9SW1-C | 25 | Y | | | | 25 |
| A 309 | 3 | | P6-46 | 19 | N | 18 | | | 15 | S10SW2-C | 25 | Y | | | | 26 |
| A 310 | 3 | | P6-47 | 19 | N | 17 | | | 15 | S2A-5B | 25 | Y | | | | 30 |
| A 311 | 3 | | P6-52 | 19 | N | 17 | | | 15 | S7A-11A | 25 | Y | | | | 31 |
| A 312 | 3 | | P6-53 | 19 | N | 17 | | | 15 | S6A-11A | 25 | Y | | | | 32 |
| A 313 | 3 | | P6-58 | 19 | N | 17 | | | 15 | S5SW1-NC | 25 | Y | | | | 36 |
| A 314 | 3 | | P7- 1 | 19 | N | 18 | | | 16 | S6A- 2A | 25 | Y | | | | 32 |
| A 315 | 3 | | P7- 2 | 19 | N | 18 | | | 16 | S6A- 3A | 25 | Y | | | | 32 |
| A 316 | 3 | | P7- 3 | 19 | N | 18 | | | 16 | S6A- 4A | 25 | Y | | | | 32 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

| MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096 |
|---|---|---|
| SCALE-NONE | REV LTR H | SHEET 43 OF 50 |

MIL 2085 - 4-63 WIR

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GFL WIRING HARNESS A H 1900096

| CONDUCTOR | | | FROM | | | | | | | TO | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH | | | CUT WIRE OR SHIELD | | | TERMINATION SPEC. 1 | | | | CUT WIRE OR SHIELD | | | TERMINATION SPEC 1 | | | |
| NUMBER | ITEM NO. | 2 | STRIP WIRE OR JACKET<br>CIRCUIT POINT | 2 | TIN | ITEM NO. | | | NO. | STRIP WIRE OR JACKET<br>CIRCUIT POINT | 2 | TIN | ITEM NO. | | | NO. |
| A 276 | 3 | | P1-56 | 19 | N | | | | 40 | P3-57 | 19 | N | 17 | | | 42 |
| A 277 | | | P1-58 | 19 | N | | | | 40 | P3-59 | 19 | N | 17 | | | 42 |
| A 278 | | | P1-60 | 19 | N | | | | 40 | P3-49 | 19 | N | 17 | | | 42 |
| A 279 | 3 | | P1-62 | 19 | N | | | | 40 | P3-63 | 19 | N | 17 | | | 42 |
| A 280 | 3 | | P1-64 | 19 | N | | | | 40 | P3-65 | 19 | N | 17 | | | 42 |
| A 281 | 3 | | P1-66 | 19 | N | | | | 40 | P3-55 | 19 | N | 17 | | | 42 |
| A 282 | 3 | | P2-63 | 19 | N | 18 | | | 41 | P6-46 | 19 | N | 18 | | | 15 |
| A 283 | 1 | | | | | A | 10 | | | | | | A | 10 | | |
| | | | | | | | | | | | | | 7 | 8 | | |
| A 283B | 3 | | E27 | 25 | N | | | | 11 | SHLD A283 | 25 | N | | | | |
| A 283L | | | P2-40 | 19 | N | 17 | | | 41 | P6- 6 | 19 | N | 17 | | | 15 |
| A 283R | | | P2-21 | 19 | N | 17 | | | 41 | P6- 5 | 19 | N | 17 | | | 15 |
| A 284 | 3 | | P3-13 | 19 | N | 17 | | | 42 | P6-19 | 19 | N | 17 | | | 15 |
| A 285 | 3 | | P3-26 | 19 | N | 17 | | | 42 | S10SW2-NC | 25 | Y | | | | 26 |
| A 286 | 3 | | P3-32 | 19 | N | 18 | | | 42 | P5-38 | 19 | N | 17 | | | 43 |
| A 287 | 3 | | P3-33 | 19 | N | 18 | | | 42 | P5-39 | 19 | N | 17 | | | 43 |
| A 288 | 3 | | P3-37 | 19 | N | 18 | | | 42 | P5-44 | 19 | N | 17 | | | 43 |
| A 289 | 3 | | P3-38 | 19 | N | 18 | | | 42 | P5-45 | 19 | N | 17 | | | 43 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

| MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096 |
|---|---|---|
| SCALE-NONE | REV LTR H | SHEET 41 OF 50 |

MIL 2085 - 4-63 WIR

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GFL WIRING HARNESS A H 1900096

| CONDUCTOR | | | FROM | | | | | | | TO | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH | | | CUT WIRE OR SHIELD | | | TERMINATION SPEC. 1 | | | | CUT WIRE OR SHIELD | | | TERMINATION SPEC 1 | | | |
| NUMBER | ITEM NO. | 2 | STRIP WIRE OR JACKET<br>CIRCUIT POINT | 2 | TIN | ITEM NO. | | | NO. | STRIP WIRE OR JACKET<br>CIRCUIT POINT | 2 | TIN | ITEM NO. | | | NO. |
| A 317 | 3 | | P7- 4 | 19 | N | 18 | | | 16 | S6A- 5A | 25 | Y | | | | 32 |
| A 318 | 3 | | P7- 5 | 19 | N | 18 | | | 16 | S6A- 6A | 25 | Y | | | | 32 |
| A 319 | 3 | | P7- 6 | 19 | N | 18 | | | 16 | S6A- 7A | 25 | Y | | | | 32 |
| A 320 | 3 | | P7- 7 | 19 | N | 18 | | | 16 | S6A- 8A | 25 | Y | | | | 32 |
| A 321 | 3 | | P7- 8 | 19 | N | 18 | | | 16 | S6A- 9A | 25 | Y | | | | 32 |
| A 322 | 3 | | P7- 9 | 19 | N | 18 | | | 16 | S6A-10A | 25 | Y | | | | 32 |
| A 323 | 3 | | P7-29 | 19 | N | 17 | | | 16 | S7A-10A | 25 | Y | | | | 31 |
| A 324 | 3 | | P7-30 | 19 | N | 17 | | | 16 | S7A- 9A | 25 | Y | | | | 31 |
| A 325 | 3 | | P7-31 | 19 | N | 17 | | | 16 | S7A- 8A | 25 | Y | | | | 31 |
| A 326 | 3 | | P7-32 | 19 | N | 17 | | | 16 | S7A- 7A | 25 | Y | | | | 31 |
| A 327 | 3 | | P7-33 | 19 | N | 17 | | | 16 | S7A- 6A | 25 | Y | | | | 31 |
| A 328 | 3 | | P7-34 | 19 | N | 17 | | | 16 | S7A- 5A | 25 | Y | | | | 31 |
| A 329 | 3 | | P7-35 | 19 | N | 17 | | | 16 | S7A- 4A | 25 | Y | | | | 31 |
| A 330 | 3 | | P7-36 | 19 | N | 17 | | | 16 | S7A- 3A | 25 | Y | | | | 31 |
| A 331 | 3 | | P7-37 | 19 | N | 17 | | | 16 | S7A- 2A | 25 | Y | | | | 31 |
| A 332 | 1 | | | | | A | 10 | | | | | | A | 10 | | |
| | | | | | | | | | | | | | 7 | 8 | | |
| A 332B | 4 | | E28 | 25 | N | | | | 33 | SHLD A332 | 25 | N | | | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

| MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096 |
|---|---|---|
| SCALE-NONE | REV LTR H | SHEET 44 OF 50 |

MIL 2085 - 4-63 WIR

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

GFL WIRING HARNESS A H 1900096

| CONDUCTOR | | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | INDIVIDUAL LENGTH ▷2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT ▷2 | | TIN | TERMINATION SPEC. ▷1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT ▷2 | | TIN | TERMINATION SPEC ▷1 ITEM NO. | NO. |
| A 337 | 3 | | S4SW1-C | 25 | Y | | 37 | S4SW2-C | 25 | Y | | 37 |
| A 338 | 3 | | S4SW1-C | 25 | Y | | 37 | S13SW1-C | 25 | Y | | 27 |
| A 339 | 3 | | S4SW1-NO | 25 | Y | | 37 | XDS2-A | 25 | Y | | 37 |
| A 340 | 3 | | S4SW2-NO | 25 | Y | | 37 | S5SW1-C | 25 | Y | | 36 |
| A 341 | 3 | | S5SW1-C | 25 | Y | | 36 | S5SW2-C | 25 | Y | | 36 |
| A 342 | 3 | | S5SW2-NC | 25 | Y | | 36 | XDS3-A | 25 | Y | | 36 |
| A 343 | 3 | | S6A- 1A | 25 | Y | | 32 | XDS1-10 | 25 | Y | | 35 |
| A 344 | 3 | | S6A- 2A | 25 | Y | | 32 | XDS1- 1 | 25 | Y | | 35 |
| A 345 | 3 | | S6A- 3A | 25 | Y | | 32 | XDS1- 2 | 25 | Y | | 35 |
| A 346 | 3 | | S6A- 4A | 25 | Y | | 32 | XDS1- 3 | 25 | Y | | 35 |
| A 347 | 3 | | S6A- 5A | 25 | Y | | 32 | XDS1- 4 | 25 | Y | | 35 |
| A 348 | 3 | | S6A- 6A | 25 | Y | | 32 | XDS1- 5 | 25 | Y | | 35 |
| A 349 | 3 | | S6A- 7A | 25 | Y | | 32 | XDS1- 6 | 25 | Y | | 35 |
| A 350 | 3 | | S6A- 8A | 25 | Y | | 32 | XDS1- 7 | 25 | Y | | 35 |
| A 351 | 3 | | S6A- 9A | 25 | Y | | 32 | XDS1- 8 | 25 | Y | | 35 |
| A 352 | 3 | | S6A-10A | 25 | Y | | 32 | XDS1- 9 | 25 | Y | | 35 |
| A 353 | 3 | | S7A- 1A | 25 | Y | | 31 | XDS1-20 | 25 | Y | | 35 |
| A 354 | 3 | | S7A- 2A | 25 | Y | | 31 | XDS1-11 | 25 | Y | | 35 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1900096
SCALE-NONE REV LTR H SHEET 46 OF 50

MIL 2085 - 4-63 WIR

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GFL WIRING HARNESS A H 1900096

| CONDUCTOR | | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | INDIVIDUAL LENGTH ▷2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT ▷2 | | TIN | TERMINATION SPEC. ▷1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT ▷2 | | TIN | TERMINATION SPEC ▷1 ITEM NO. | NO. |
| A 355 | 3 | | S7A- 3A | 25 | Y | | 31 | XDS1-12 | 25 | Y | | 35 |
| A 356 | 3 | | S7A- 4A | 25 | Y | | 31 | XDS1-13 | 25 | Y | | 35 |
| A 357 | 3 | | S7A- 5A | 25 | Y | | 31 | XDS1-14 | 25 | Y | | 35 |
| A 358 | 3 | | S7A- 6A | 25 | Y | | 31 | XDS1-15 | 25 | Y | | 35 |
| A 359 | 3 | | S7A- 7A | 25 | Y | | 31 | XDS1-16 | 25 | Y | | 35 |
| A 360 | 3 | | S7A- 8A | 25 | Y | | 31 | XDS1-17 | 25 | Y | | 35 |
| A 361 | 3 | | S7A- 9A | 25 | Y | | 31 | XDS1-18 | 25 | Y | | 35 |
| A 362 | 3 | | S7A-10A | 25 | Y | | 31 | XDS1-19 | 25 | Y | | 35 |
| A 363 | 3 | | S9SW2-C | 25 | Y | | 25 | S4SW2-C | 25 | Y | | 37 |
| A 364 | 3 | | S9SW2-C | 25 | Y | | 25 | S10SW1-C | 25 | Y | | 26 |
| A 365 | 3 | | S9SW2-NO | 25 | Y | | 25 | S12SW1-C | 25 | Y | | 25 |
| A 366 | 3 | | S9SW2-NO | 25 | Y | | 25 | XDS4-A | 25 | Y | | 25 |
| A 367 | 3 | | S10SW1-C | 25 | Y | | 26 | S11- 6A | 25 | Y | | 28 |
| A 368 | 3 | | S10SW1-NO | 25 | Y | | 26 | XDS5-A | 25 | Y | | 26 |
| A 369 | 3 | | S10SW1-NC | 25 | Y | | 26 | XDS5-B | 25 | Y | | 26 |
| A 370 | 3 | | S13SW1-C | 25 | Y | | 27 | XF1- 2 | 25 | Y | | 22 |
| A 371 | 3 | | S13SW1-NO | 25 | Y | | 27 | XDS7-A | 25 | Y | | 27 |
| A 372 | 3 | | S13SW2-C | 25 | Y | | 27 | S13SW3-C | 25 | Y | | 27 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
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MIL 2085 - 4-63 WIR

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GFL WIRING HARNESS A H 1900096

| CONDUCTOR | | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | INDIVIDUAL LENGTH ▷2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT ▷2 | | TIN | TERMINATION SPEC. ▷1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT ▷2 | | TIN | TERMINATION SPEC ▷1 ITEM NO. | NO. |
| A 332L | | | S1A- 1B | 25 | Y | | 38 | S2B- 1B | 25 | Y | | 30 |
| A 332R | | | S1A- 1A | 25 | Y | | 38 | S2B- 1A | 25 | Y | | 30 |
| A 333 | 1 | | | | | A 10 | | | | | A 10 | |
| | | | | | | | | | | | 7 8 | |
| A 333A | 4 | | E28 | 25 | N | | 33 | SHLD A333 | 25 | N | | |
| A 333L | | | S1A- 3B | 25 | Y | | 38 | S2B- 3B | 25 | Y | | 30 |
| A 333R | | | S1A- 3A | 25 | Y | | 38 | S2B- 3A | 25 | Y | | 30 |
| A 334 | 3 | | S11B- 6A | 25 | Y | | 28 | S10SW2-C | 25 | Y | | 26 |
| A 335 | 1 | | | | | A 10 | | | | | A 10 | |
| | | | | | | 7 8 | | | | | | |
| A 335A | 4 | | SHLD A335 | 25 | N | | | E28 | 25 | N | | 33 |
| A 335L | | | S2B- 1B | 25 | Y | | 30 | S8A- 1B | 25 | Y | | 29 |
| A 335R | | | S2B- 1A | 25 | Y | | 30 | S8A- 1A | 25 | Y | | 29 |
| A 336 | 1 | | | | | A 10 | | | | | A 10 | |
| | | | | | | 7 8 | | | | | | |
| A 336A | 4 | | SHLD A336 | 25 | N | | | E28 | 25 | N | | 33 |
| A 336L | | | S2B- 3B | 25 | Y | | 30 | S8A- 3B | 25 | Y | | 29 |
| A 336R | | | S2B- 3A | 25 | Y | | 30 | S8A- 3A | 25 | Y | | 29 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
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MIL 2085 - 4-63 WIR

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| CONDUCTOR | | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | INDIVIDUAL LENGTH ▷2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT ▷2 | | TIN | TERMINATION SPEC. ▷1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT ▷2 | | TIN | TERMINATION SPEC ▷1 ITEM NO. | NO. |
| A 373 | 3 | | S13SW3-C | 25 | Y | | 27 | XDS7-G | 25 | Y | | 27 |
| A 374 | 3 | | XDS1-G | 25 | Y | 20 | 34 | XDS2-G | 25 | Y | | 37 |
| A 375 | 3 | | XDS1-G | 25 | Y | | 34 | XDS5-G | 25 | Y | | 26 |
| A 376 | 3 | | XDS2-A | 25 | Y | | 37 | XDS2-C | 25 | Y | | 37 |
| A 377 | 3 | | XDS2-G | 25 | Y | | 37 | XDS3-G | 25 | Y | | 36 |
| A 378 | 3 | | XDS3-A | 25 | Y | | 36 | XDS3-C | 25 | Y | | 36 |
| A 379 | 3 | | XDS3-G | 25 | Y | | 36 | XDS4-G | 25 | Y | | 25 |
| A 380 | 3 | | XDS4-A | 25 | Y | | 25 | XDS4-C | 25 | Y | | 25 |
| A 381 | 3 | | XDS4-G | 25 | Y | | 25 | XDS6-G | 25 | Y | | 25 |
| A 382 | 3 | | XDS5-A | 25 | Y | | 26 | XDS5-D | 25 | Y | | 26 |
| A 383 | 3 | | XDS5-B | 25 | Y | | 26 | XDS5-C | 25 | Y | | 26 |
| A 384 | 3 | | XDS5-G | 25 | Y | | 26 | XDS7-G | 25 | Y | | 27 |
| A 385 | 3 | | XDS6-A | 25 | Y | | 25 | XDS6-C | 25 | Y | | 25 |
| A 386 | 3 | | XDS6-G | 25 | Y | | 25 | P6-57 | 19 | N | 18 | 15 |
| A 387 | 3 | | XDS7-A | 25 | Y | | 27 | XDS7-C | 25 | Y | | 27 |
| A 388 | 4 | | E3 | 25 | N | | 12 | E2 | 25 | N | | 18 |
| A 389 | 4 | | E4 | 25 | N | | 13 | E2 | 25 | N | | 18 |
| A 390 | 4 | | E5 | 25 | N | | 14 | E2 | 25 | N | | 18 |

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INCHES
0 1 2
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| CONDUCTOR | | | FROM | | | | | | | TO | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | CIRCUIT POINT | STRIP WIRE OR JACKET 2 | TIN | CUT WIRE OR SHIELD 2 | TERMINATION SPEC. 1 ITEM NO. | | NO. | CIRCUIT POINT | STRIP WIRE OR JACKET 2 | TIN | CUT WIRE OR SHIELD 2 | TERMINATION SPEC 1 ITEM NO. | | NO. | |
| A 412 | 4 | | E27 | 25 | N | | | | 11 | E2 | 25 | N | | | | 18 | |
| A 413 | 4 | | E28 | 25 | N | | | | 33 | E2 | 25 | N | | | | 18 | |
| A 418 | 4 | | P6-59 | 19 | N | | | | 15 | E27 | 25 | N | | | | 11 | |
| A 419 | 3 | | S2A-2A | 25 | Y | | | | 30 | S2A-4A | 25 | Y | | | | 30 | |
| A 420 | 29 | | | | | | A | 30 | | | | | | A | 10 | | |
| | | | | | | | 15 | 16 | | | | | | 5 | 6 | | |
| A 420B | 3 | | P5-16 | 19 | N | | 18 | | 43 | SHLD A420 | 25 | N | | | | | |
| A 420E | | | J4-H1 | 13 | N | | 14 | | 4 | P5-65 | 19 | N | | 18 | | 43 | |
| A 420X | | | J4-H2 | | | 28 | | | 4 | SHLD A420 | | | | | | | |
| A 421 | 3 | | S11B-3A | 25 | Y | | | | 28 | P2-63 | 19 | N | | 17 | | 41 | |
| A 422 | 3 | | S11B-5A | 25 | Y | | | | 28 | S2A-5A | 25 | Y | | | | 30 | |

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INCHES
0 1 2
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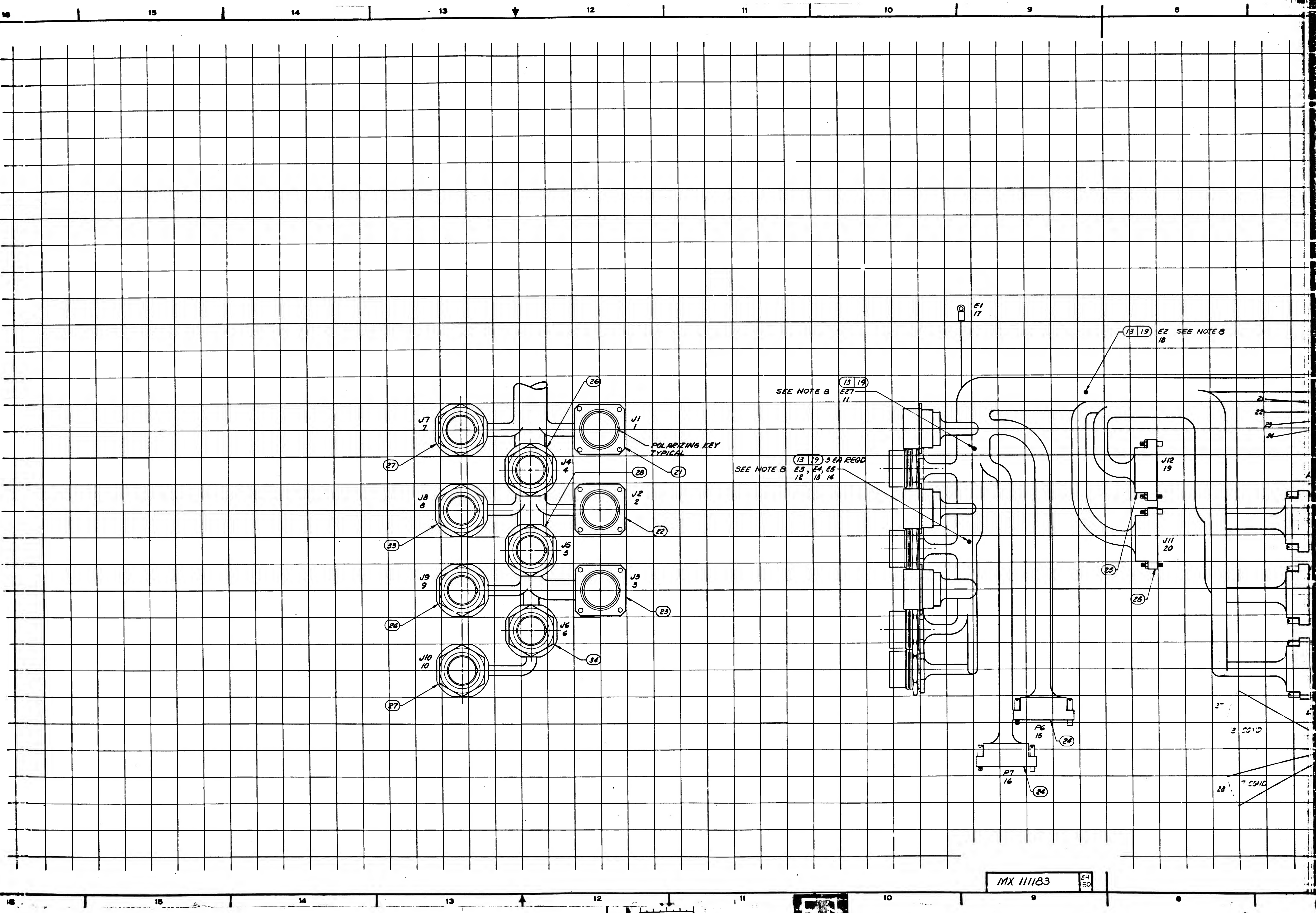
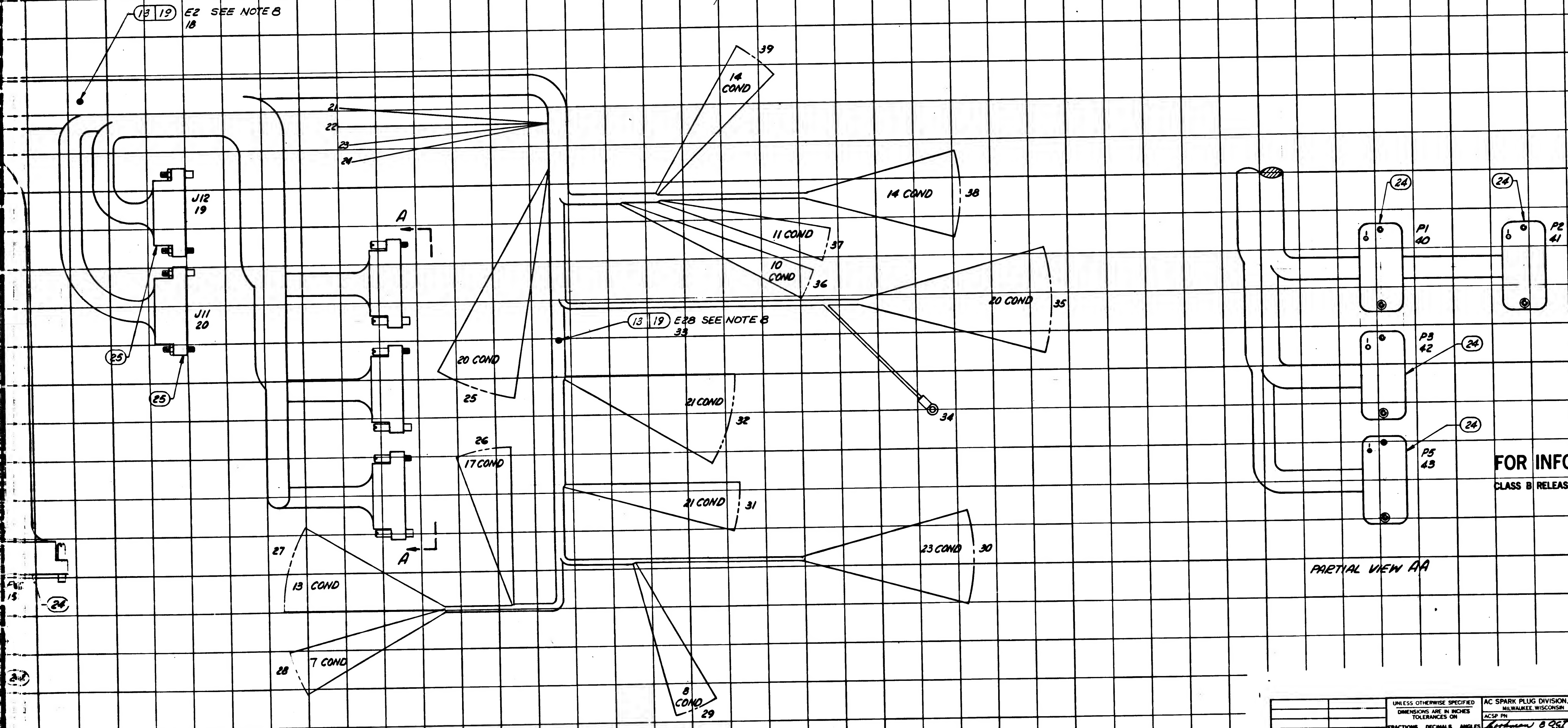


MX 111183

SH
50

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
| H | | THIS SHEET ADDED<br>PER TDRR 44869 | | 63 | |



FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 01801 DATE 2 July 63

| | | | |
|---|---|---|---|
| 1900057-011 | 1900057-011 | UNLESS OTHERWISE SPECIFIED<br>DIMENSIONS ARE IN INCHES<br>TOLERANCES ON<br>FRACTIONS + — DECIMALS + — ANGLES + — | AC SPARK PLUG DIVISION, GMC<br>MILWAUKEE, WISCONSIN |
| NEXT ASSY | USED ON | DO NOT SCALE THIS DRAWING | ACSP PN |
| APPLICATION | | MATERIAL — | DRAWN 8 OCT 63 |
| | | CONTRACT NAS 9-497 | CHECKED 10 OCT 63 |
| | | | APPROVAL 15 OCT 63 |
| | | | APPROVAL 12/2/63 |
| | | | NASA APPROVAL 12-3-63 W. J. Blume |
| | | | MIT APPROVAL |

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WIRING HARNESS A

CODE IDENT NO. | SIZE J2 | 1900096

SCALE 1/1 | SHEET 50 OF 50

1900096

INCHES
PHOTOGRAPHIC SCALE ONLY

F-2

| APPLICATION | |
|---|---|
| NEXT ASSY | USED ON |
| 1900057-011 | 1900057-011 |

| REVISIONS | | | |
|---|---|---|---|
| SYM | DESCRIPTION | DATE | APPROVAL |
| H | REPLACES REV. G WITH CHANGE PER MXC 191409 | — | TP<br>Om |
| | REVISED PER TDR 04869 | 63 | |
| J | CHANGE IN ACCORDANCE WITH MXC 191496 | 9 JAN 64 | WSM<br>Om |
| K | CHANGE IN ACCORDANCE WITH MXC 192540 | 5 FEB 64 | S.A.<br>WA |
| L | CHANGE IN ACCORDANCE WITH CM193527 | 19 FEB 64 | S.A.<br>W.A. |
| M | CHANGE IN ACCORDANCE WITH CM-193646 | 24-FEB-64 | |
| N | CHANGE IN ACCORDANCE WITH CM-193808 | 16 MAR 64 | JM.<br>P7 |

08398—

## FOR INFORMATION ONLY

**CLASS B RELEASE TDR No.** 01801 **DATE** 2 July 63

Ⓗ **REPLACES REV G WITH CHANGE**

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| REV | J | J | J | J | J | J | J | J | J | J | J | J | J | J | J | J | J | J | J | N | J | J | J | J | J | M |
| SHEET | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 |

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| REV STATUS OF SHEETS | REV | N | M | J | K | J | L | J | K | J | J | J | J | J | K | K | J | K | J | J | J | J | J | J |
| | SHEET | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN Lochmann DATE 10 OCT 63
CHECKED Hint 14 OCT 63
APPROVAL 15 OCT 63
APPROVAL Johnson 12/2/63
NASA APPROVAL 12-2
MIT APPROVAL
CONTRACT NAS 9-497

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WIRING HARNESS A

CODE IDENT NO.

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1900096

REV N

SCALE —

SHEET 1 OF 51

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REVISION STATUS OF SHEETS

| SH | REV | SH | REV | SH | REV | SH | REV | SH | REV | SH | REV | SH | REV | SH | REV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 | M | | | | | | | | | | | | | | |
| 51 | L | | | | | | | | | | | | | | |

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REVISION
M

NASA DRAWING NO
1900096
SHEET 2 OF 51

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PENNANT NOTE — GENERAL NOTES

1 SEE CONDUCTOR CHART

2 SEE CONDUCTOR CHART

3 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

4 MARK CONDUCTOR IDENTIFICATION PER ND1002019.

5 MARK CONDUCTOR IDENTIFICATION ON SINGLE CONDUCTORS PER ND1002019 OMITTING ALL SUFFIX LETTERS EXCEPT A AND B.

6 SPACING OF CONDUCTOR IDENTIFICATION SHALL BE EVERY 1.2 INCHES.

7 SPIRALLING OF THE MARKING IS ALLOWED.

8 MARK SLEEVING WITH REFERENCE DESIGNATION AS SHOWN .12 INCH HIGH. COLOR BLACK PER ND1002019.

9 MARK SLEEVING OF MULTI-CONDUCTORS WITH THE CONDUCTOR NUMBER .12 INCH HIGH. COLOR BLACK. PER ND1002019 WHEN SLEEVING ITEM NUMBERS FOLLOW AN A OR T IN THE ACCESSORIES ITEM NUMBER FIELD.

10 A OR T PREFIX IN THE ACCESSORIES ITEM NUMBER COLUMN INDICATES THE READING POSITION AWAY FROM TERMINATION OR TOWARD TERMINATION RESPECTIVELY. OF THE WIRE MARKER SLEEVE.

11 LACE HARNESS USING ITEM 35.

12 IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (ES-267).

13 SOLDER PER MIL-STD-440 USING ITEMS 31 AND 32.

14 Y OR N IN TINNED COLUMN INDICATES YES OR NO.

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PENNANT NOTE — GENERAL NOTES

15 A LETTER WITH AN ASTERISK SUFFIX INDICATES A LOWER CASE LETTER.

16 GRID MODULE IS 1 INCH.

17 UNLESS OTHERWISE SPECIFIED ——
FEATURE CENTERLINES ARE LOCATED WITHIN + OR - .25 INCH.
END OF HOOKUP WIRES OR ACCESSORIES ARE LOCATED WITHIN + OR - .12 INCH.

18 VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.

19 THE SUFFIX LETTER OF A CONDUCTOR IDENTIFICATION NUMBER INDICATES CONDUCTOR SHIELDING. COLOR. OR MARKING.
A - FROM END SHIELD
B - TO END SHIELD
E - GRAY
L - WHITE WITH BLUE TRACER
R - WHITE WITH RED TRACER
X - COAX OUTER CONDUCTOR

20 FASTEN MARKER SECURELY WITH ITEM 35. WRAP MARKER TO CONFORM TO CABLE CONFIGURATION

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SCALE-NONE REV LTR K SHEET 4 OF 51

GFL WIRING HARNESS A J 1900096

PENNANT NOTE

GENERAL NOTES

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

|  |  |  | TOLERANCE |  |  |
|---|---|---|---|---|---|
| APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD. | WIRE OR CABLE | STRIP WIRE | STRIP JACKET | CUT WIRE | CUT SHIELD |
| UNDER 1 INCH | + .06-.00 | +.03-.00 | +.06-.06 | +.06-.06 | +.06-.06 |
| 1 INCH TO 6 INCHES | + .50-.00 | +.06-.00 | +.25-.25 | +.25-.25 | +.25-.25 |
| 6 INCHES TO 6 FEET | +1.00-.00 |  | +.50-.50 | +.50-.50 | +.50-.50 |
| OVER 6 FEET | +2.00-.00 |  |  |  |  |

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SCALE-NONE REV LTR J SHEET 5 OF 51

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GFL WIRING HARNESS A L 1900096

PENNANT LIST OF MATERIALS

| NOTE | ITEM | QTY | PART NO | DESCRIPTION |
|---|---|---|---|---|
|  | 1 | 1 | 1900096-004 | WIRE ND1002181 CLASS 4 WHITE JACKET TYPE 2 24AWG (WHT/RED, WHT/BLU) 73 FT TOTAL LENGTH |
|  | 2 | 1 | 1900096-003 | WIRE ND1002181 CLASS 4 WHITE JACKET TYPE 1 24AWG (WHITE) 36 INCHES TOTAL LENGTH |
|  | 3 | 1 | 1900096-002 | WIRE ND1002181 CLASS 1 TYPE 1 24AWG (WHITE) 680 FT TOTAL LENGTH |
|  | 4 | 1 | 1900096-001 | WIRE ND1002181 CLASS 1 TYPE 1 22AWG (WHITE) 220 FT TOTAL LENGTH |
| 18 | 5 | 60 | 1000243-002 | FERRULE, ELECTRICAL CONDUCTOR INNER |
| 18 | 6 | 60 | 1000242-004 | FERRULE, ELECTRICAL CONDUCTOR OUTER |
| 18 | 7 | 25 | 1000243-006 | FERRULE, ELECTRICAL CONDUCTOR INNER |
| 18 | 8 | 25 | 1000242-005 | FERRULE, ELECTRICAL CONDUCTOR OUTER |
|  | 9 |  |  | DELETED |
|  | 10 | 110 | 1010490-198 | INSULATION SLEEVING, ELECTRICAL (HEAT SHRINK) |
|  | 11 | 1 | 1010490-200 | INSULATION SLEEVING, ELECTRICAL (HEAT SHRINK) |
|  | 13 | 6 | 1016006-002 | SPLICE REDUCER, PERMANENT, CRIMP STYLE, COPPER |
| 18 | 14 | 59 | 1015908- 21 | COAXIAL, SOCKET CONTACT |
| 18 | 15 | 59 | 1015908- 41 | COAXIAL, OUTER MALE BODY |
| 18 | 16 | 69 | 1015908- 51 | COAXIAL, HYRING |
| 18 | 17 | 254 | 1015818-424 | CONNECTOR SOCKET CONTACTS |

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PENNANT LIST OF MATERIALS

| NOTE | ITEM | QTY | PART NO | DESCRIPTION |
|---|---|---|---|---|
| 18 | 18 | 204 | 1015818-426 | CONNECTOR SOCKET CONTACTS |
|  | 19 | 6 | 1010490-258 | INSULATION SLEEVING, ELECTRICAL (HEAT SHRINK) |
| 18 | 20 | 2 | 1015902- 46 | TERMINAL LUG |
|  | 21 | 1 | MS3127E-24-61P | CONNECTOR, RECEP ELEC |
|  | 22 | 1 | MS3127E-24-61PW | CONNECTOR, RECEP ELEC |
|  | 23 | 1 | MS3127E-24-61PX | CONNECTOR, RECEP ELEC |
| 18 | 24 | 6 | 1015818-660 | CONNECTOR, PLUG ELEC |
| 18 | 25 | 2 | 1015867-600 | CONNECTOR, RECEP ELEC |
| 18 | 26 | 2 | 1015906-100 | CONNECTOR, RECEP ELEC |
| 18 | 27 | 2 | 1015906-101 | CONNECTOR, RECEP ELEC |
| 18 | 28 | 1 | 1015906-102 | CONNECTOR, RECEP ELEC |
|  | 29 | 1 | 1900096-005 | WIRE-COAX MIL-C-17/69A RG188A/U 173 FT TOTAL LG |
|  | 30 | 59 | 1010490-202 | INSULATION SLEEVING, ELECTRICAL (HEAT SHRINK) |
|  | 31 | AR | QQ-S-571 | SOLDER SN60 (ES-2175 ALLOY 1) |
|  | 32 | AR | QQ-S-571 | FLUX TYPE AR (ES-2175 TYPE 1 OR 2) OR MIL-F-14256 FLUX (ES-2796) |
| 18 | 33 | 1 | 1015906-103 | CONNECTOR, RECEP. ELEC. |
| 18 | 34 | 1 | 1015906-104 | CONNECTOR, RECEP. ELEC. |

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GFL WIRING HARNESS A K 1900096

PENNANT LIST OF MATERIALS

| NOTE | ITEM | QTY | PART NO | DESCRIPTION |
|---|---|---|---|---|
|  | 35 | 1 | MIL-T-713 | LACING TAPE TYPE P, CLASS 2, BLACK (ES-2732 NO. 18) |
|  | 36 | 1 | 1016128-001 | BAND IDENTIFICATION, BLANK |

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GFL WIRING HARNESS A J 1900096

| CONDUCTOR | | FROM | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO | CIRCUIT POINT | T M | ITEM NO | NO. | CIRCUIT POINT | T M | ITEM NO. | NO. |
| A 1 | 4 | J1-A | 19N | | 1 | E1 | 25 | 20 | 17 |
| A 2 | 3 | J1-B | 19N | | 1 | P6-56 | 19N | 17 | 15 |
| A 3 | 3 | J1-C | 19N | | 1 | P6-54 | 19N | 17 | 15 |
| A 4 | 3 | J1-D | 19N | | 1 | P6-55 | 19N | 17 | 15 |
| A 5 | 3 | J1-E | 19N | | 1 | S6A- 1A | 25Y | | 32 |
| A 6 | 3 | J1-F | 19N | | 1 | P7- 1 | 19N | 18 | 16 |
| A 7 | 3 | J1-G | 19N | | 1 | P7- 2 | 19N | 18 | 16 |
| A 8 | 3 | J1-H | 19N | | 1 | P7- 3 | 19N | 18 | 16 |
| A 9 | 3 | J1-J | 19N | | 1 | P7- 4 | 19N | 18 | 16 |
| A 10 | 3 | J1-K | 19N | | 1 | P7- 5 | 19N | 18 | 16 |
| A 11 | 3 | J1-L | 19N | | 1 | P7- 6 | 19N | 18 | 16 |
| A 12 | 3 | J1-M | 19N | | 1 | P7- 7 | 19N | 18 | 16 |
| A 13 | 3 | J1-N | 19N | | 1 | P7- 8 | 19N | 18 | 16 |
| A 14 | 3 | J1-P | 19N | | 1 | P7- 9 | 19N | 18 | 16 |
| A 15 | 3 | J1-R | 19N | | 1 | P7-11 | 19N | 17 | 16 |
| A 16 | 3 | J1-S | 19N | | 1 | P7-12 | 19N | 17 | 16 |
| A 17 | 3 | J1-T | 19N | | 1 | P7-13 | 19N | 17 | 16 |
| A 18 | 3 | J1-U | 19N | | 1 | P7-14 | 19N | 17 | 16 |

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SHEET 9 OF 51

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| CONDUCTOR | | FROM | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO | CIRCUIT POINT | T M | ITEM NO | NO. | CIRCUIT POINT | T M | ITEM NO | NO. |
| A 19 | 3 | J1-V | 19N | | 1 | P7-15 | 19N | 17 | 16 |
| A 20 | 3 | J1-W | 19N | | 1 | P7-16 | 19N | 17 | 16 |
| A 21 | 3 | J1-X | 19N | | 1 | P7-17 | 19N | 17 | 16 |
| A 22 | 3 | J1-Y | 19N | | 1 | P7-18 | 19N | 17 | 16 |
| A 23 | 3 | J1-Z | 19N | | 1 | P7-19 | 19N | 17 | 16 |
| A 24 | 3 | J1-A* | 19N | | 1 | P7-20 | 19N | 17 | 16 |
| A 25 | 3 | J1-B* | 19N | | 1 | P7-21 | 19N | 17 | 16 |
| A 26 | 3 | J1-C* | 19N | | 1 | P7-22 | 19N | 17 | 16 |
| A 27 | 3 | J1-D* | 19N | | 1 | P7-23 | 19N | 17 | 16 |
| A 28 | 3 | J1-E* | 19N | | 1 | P7-24 | 19N | 17 | 16 |
| A 29 | 3 | J1-F* | 19N | | 1 | P7-25 | 19N | 17 | 16 |
| A 30 | 3 | J1-G* | 19N | | 1 | P7-26 | 19N | 17 | 16 |
| A 31 | 3 | J1-H* | 19N | | 1 | P7-27 | 19N | 17 | 16 |
| A 32 | 3 | J1-I* | 19N | | 1 | P7-28 | 19N | 17 | 16 |
| A 33 | 3 | J1-J* | 19N | | 1 | P7-29 | 19N | 18 | 16 |
| A 34 | 3 | J1-K* | 19N | | 1 | P7-30 | 19N | 18 | 16 |
| A 35 | 3 | J1-M* | 19N | | 1 | P7-31 | 19N | 18 | 16 |
| A 36 | 3 | J1-N* | 19N | | 1 | P7-32 | 19N | 18 | 16 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GFL WIRING HARNESS A J 1900096

| CONDUCTOR | | FROM | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CIRCUIT POINT | T M | ITEM NO | NO. | CIRCUIT POINT | T M | ITEM NO. | NO |
| A 37 | 3 | J1-P* | 19N | | 1 | P7-33 | 19N | 18 | 16 |
| A 38 | 3 | J1-Q* | 19N | | 1 | P7-34 | 19N | 18 | 16 |
| A 39 | 3 | J1-R* | 19N | | 1 | P7-35 | 19N | 18 | 16 |
| A 40 | 3 | J1-S* | 19N | | 1 | P7-36 | 19N | 18 | 16 |
| A 41 | 3 | J1-T* | 19N | | 1 | P7-37 | 19N | 18 | 16 |
| A 42 | 3 | J1-U* | 19N | | 1 | S7A- 1A | 25Y | | 31 |
| A 43 | 3 | J1-V* | 19N | | 1 | P6-51 | 19N | 17 | 15 |
| A 44 | 3 | J1-W* | 19N | | 1 | S11A- 1A | 25Y | | 28 |
| A 45 | 3 | J1-X* | 19N | | 1 | S11A- 3A | 25Y | | 28 |
| A 46 | 3 | J1-Y* | 19N | | 1 | S11A- 5A | 25Y | | 28 |
| A 47 | 3 | J1-BB | 19N | | 1 | P6-48 | 19N | 17 | 15 |
| A 48 | 3 | J1-AA | 19N | | 1 | P6-49 | 19N | 17 | 15 |
| A 49 | 3 | J1-Z* | 19N | | 1 | P6-50 | 19N | 17 | 15 |
| A 50 | 1 | | | A 10<br>7 8 | | | | A 10 | |
| A 50A | 4 | SHLD A50 | 25N | | | E27 | 25N | | 11 |
| A 50L | | J1-CC | 19N | | 1 | P6-16 | 19N | 17 | 15 |
| A 50R | | J1-DD | 19N | | 1 | P6-21 | 19N | 17 | 15 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GFL WIRING HARNESS A J 1900096

| CONDUCTOR | | FROM | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CIRCUIT POINT | T M | ITEM NO. | NO. | CIRCUIT POINT | T M | ITEM NO. | NO. |
| A 51 | 3 | J2-B | 19N | | 2 | P2-61 | 19N | 18 | 41 |
| A 52 | 3 | J2-C | 19N | | 2 | P2-62 | 19N | 18 | 41 |
| A 53 | 3 | J2-D | 19N | | 2 | P2-52 | 19N | 18 | 41 |
| A 54 | 3 | J2-E | 19N | | 2 | P2-53 | 19N | 18 | 41 |
| A 55 | 3 | J2-F | 19N | | 2 | P2-54 | 19N | 18 | 41 |
| A 56 | 3 | J2-G | 19N | | 2 | P2-55 | 19N | 18 | 41 |
| A 57 | 3 | J2-H | 19N | | 2 | P2-56 | 19N | 18 | 41 |
| A 58 | 3 | J2-J | 19N | | 2 | P2-57 | 19N | 18 | 41 |
| A 59 | 3 | J2-K | 19N | | 2 | P2-58 | 19N | 18 | 41 |
| A 60 | 3 | J2-L | 19N | | 2 | P2-59 | 19N | 18 | 41 |
| A 61 | 3 | J2-M | 19N | | 2 | P2-60 | 19N | 18 | 41 |
| A 62 | 3 | J2-N | 19N | | 2 | J12-15 | 19N | 17 | 19 |
| A 63 | 3 | J2-P | 19N | | 2 | J12-10 | 19N | 18 | 19 |
| A 64 | 3 | J2-R | 19N | | 2 | P6-46 | 19N | 18 | 15 |
| A 65 | 3 | J2-S | 19N | | 2 | XF1- 1 | 25Y | | 21 |
| A 66 | 3 | J2-T | 19N | | 2 | P6-57 | 19N | 17 | 15 |
| A 67 | 3 | J2-U | 19N | | 2 | J12-29 | 19N | 18 | 19 |
| A 68 | 3 | J2-V | 19N | | 2 | J12-28 | 19N | 18 | 19 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GFL WIRING HARNESS A J 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | F N | FROM TERMINATION SPEC ITEM NO. | NO. | TO CIRCUIT POINT | F N | TO TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 69 | 3 | J2-W | 19N | | 2 | J12-27 | 19N | 18 | 19 |
| A 70 | 3 | J2-X | 19N | | 2 | J12-26 | 19N | 18 | 19 |
| A 71 | 3 | J2-Y | 19N | | 2 | J12-16 | 19N | 18 | 19 |
| A 72 | 3 | J2-Z | 19N | | 2 | J12-17 | 19N | 18 | 19 |
| A 73 | 3 | J2-A* | 19N | | 2 | J12-18 | 19N | 18 | 19 |
| A 74 | 3 | J2-B* | 19N | | 2 | J12-19 | 19N | 18 | 19 |
| A 75 | 3 | J2-C* | 19N | | 2 | J12-20 | 19N | 18 | 19 |
| A 76 | 3 | J2-D* | 19N | | 2 | J12-21 | 19N | 18 | 19 |
| A 77 | 3 | J2-E* | 19N | | 2 | J12-22 | 19N | 18 | 19 |
| A 78 | 3 | J2-F* | 19N | | 2 | J12-23 | 19N | 18 | 19 |
| A 79 | 3 | J2-G* | 19N | | 2 | J12-24 | 19N | 18 | 19 |
| A 80 | 3 | J2-H* | 19N | | 2 | J12-30 | 19N | 18 | 19 |
| A 81 | 3 | J2-I* | 19N | | 2 | J12-25 | 19N | 17 | 19 |
| A 82 | 3 | J2-M* | 19N | | 2 | P6-32 | 19N | 17 | 15 |
| A 83 | 3 | J2-N* | 19N | | 2 | P6-33 | 19N | 17 | 15 |
| A 84 | 3 | J2-P* | 19N | | 2 | P6-34 | 19N | 17 | 15 |
| A 85 | 3 | J2-Q* | 19N | | 2 | P6-35 | 19N | 17 | 15 |
| A 86 | 3 | J2-R* | 19N | | 2 | P6-36 | 19N | 17 | 15 |

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS

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GFL WIRING HARNESS A K 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | F N | FROM TERMINATION SPEC ITEM NO. | NO. | TO CIRCUIT POINT | F N | TO TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 87 | 3 | J2-S* | 19N | | 2 | P6-37 | 19N | 17 | 15 |
| A 88 | 3 | J2-T* | 19N | | 2 | P6-38 | 19N | 17 | 15 |
| A 89 | 3 | J2-U* | 19N | | 2 | P6-39 | 19N | 17 | 15 |
| A 90 | 3 | J2-V* | 19N | | 2 | P6-40 | 19N | 17 | 15 |
| A 91 | 3 | J2-W* | 19N | | 2 | P6-41 | 19N | 17 | 15 |
| A 92 | 3 | J2-X* | 19N | | 2 | P6-42 | 19N | 17 | 15 |
| A 93 | 3 | J2-Y* | 19N | | 2 | J11-93 | 19N | 17 | 15 |
| A 94 | 3 | J2-Z* | 19N | | 2 | J11-59 | 19N | 17 | 15 |
| A 95 | 3 | J2-AA | 19N | | 2 | P6-45 | 19N | 17 | 15 |
| A 96 | 3 | J2-BB | 19N | | 2 | P6-29 | 19N | 17 | 15 |
| A 97 | 3 | J2-CC | 19N | | 2 | P6-28 | 19N | 17 | 15 |
| A 98 | 3 | J2-EE | 19N | | 2 | P6-31 | 19N | 17 | 15 |
| A 99 | 3 | J2-FF | 19N | | 2 | P6-30 | 19N | 17 | 15 |
| A 100 | 3 | J2-GG | 19N | | 2 | S13SW2-NO | 25Y | | 27 |
| A 101 | 3 | J2-GG | 19N | | 2 | J2-HH | 19N | | 2 |
| A 102 | 4 | J3-A | 19N | | 3 | E2 | 25N | | 16 |
| A 103 | 1 | | | A 10<br>7 8 | | | | A 10 | |

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GFL WIRING HARNESS A K 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | F N | FROM TERMINATION SPEC ITEM NO. | NO. | TO CIRCUIT POINT | F N | TO TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 103A | 4 | SHLD A103 | 25N | | | E3 | 25N | | 12 |
| A 103L | | J3-B* | 19N | | 3 | S3A-10B | 25Y | | 39 |
| A 103R | | J3-B | 19N | | 3 | S3A-10A | 25Y | | 39 |
| A 104 | 1 | | | A 10<br>7 8 | | | | A 10 | |
| A 104A | 4 | SHLD A104 | 25N | | | E3 | 25N | | 12 |
| A 104L | | J3-C* | 19N | | 3 | S3A- 6B | 25Y | | 39 |
| A 104R | | J3-C | 19N | | 3 | S3A- 6A | 25Y | | 39 |
| A 105 | 1 | | | A 10<br>7 8 | | | | A 10 | |
| A 105A | 4 | SHLD A105 | 25N | | | E3 | 25N | | 12 |
| A 105L | | J3-D* | 19N | | 3 | S3A- 5B | 25Y | | 39 |
| A 105R | | J3-D | 19N | | 3 | S3A- 5A | 25Y | | 39 |
| A 106 | 1 | | | A 10<br>7 8 | | | | A 10 | |
| A 106A | 4 | SHLD A106 | 25N | | | E3 | 25N | | 12 |
| A 106L | | J3-E* | 19N | | 3 | S3A- 4B | 25Y | | 39 |
| A 106R | | J3-E | 19N | | 3 | S3A- 4A | 25Y | | 39 |

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GFL WIRING HARNESS A J 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | F N | FROM TERMINATION SPEC ITEM NO. | NO. | TO CIRCUIT POINT | F N | TO TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 107 | 1 | | | A 10<br>7 8 | | | | A 10 | |
| A 107A | 4 | SHLD A107 | 25N | | | E3 | 25N | | 12 |
| A 107L | | J3-F* | 19N | | 3 | S3A- 3B | 25Y | | 39 |
| A 107R | | J3-F | 19N | | 3 | S3A- 3A | 25Y | | 39 |
| A 108 | 1 | | | A 10<br>7 8 | | | | A 10 | |
| A 108A | 4 | SHLD A108 | 25N | | | E3 | 25N | | 12 |
| A 108L | | J3-G* | 19N | | 3 | S3A- 2B | 25Y | | 39 |
| A 108R | | J3-G | 19N | | 3 | S3A- 2A | 25Y | | 39 |
| A 109 | 1 | | | A 10<br>7 8 | | | | A 10 | |
| A 109A | 4 | SHLD A109 | 25N | | | E4 | 25N | | 13 |
| A 109L | | J3-H* | 19N | | 3 | P6-14 | 19N | 17 | 15 |
| A 109R | | J3-H | 19N | | 3 | P6-13 | 19N | 17 | 15 |
| A 110 | 1 | | | A 10<br>7 8 | | | | A 10 | |
| A 110A | 4 | SHLD A110 | 25N | | | E4 | 25N | | 13 |

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GFL WIRING HARNESS A K 1900096

| CONDUCTOR | | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T/N 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T/N 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 110L | | | J3-J* | 19N | | | 3 | S1A- 6B | 25Y | | | 38 |
| A 110R | | | J3-J | 19N | | | 3 | S1A- 6A | 25Y | | | 38 |
| A 111 | 1 | | | | | A 10 | | | | | A 10 | |
| | | | | | | 7 8 | | | | | | |
| A 111A | 4 | | SHLD A111 | 25N | | | | E4 | 25N | | | 13 |
| A 111L | | | J3-K* | 19N | | | 3 | S2B- 5B | 25Y | | | 30 |
| A 111R | | | J3-K | 19N | | | 3 | S2B- 5A | 25Y | | | 30 |
| A 112 | 1 | | | | | A 10 | | | | | A 10 | |
| | | | | | | 7 8 | | | | | | |
| A 112A | 4 | | SHLD A112 | 25N | | | | E4 | 25N | | | 13 |
| A 112L | | | J3-M* | 19N | | | 3 | S8A- 5B | 25Y | | | 29 |
| A 112R | | | J3-M | 19N | | | 3 | S8A- 5A | 25Y | | | 29 |
| A 113 | 1 | | | | | A 10 | | | | | A 10 | |
| | | | | | | 7 8 | | | | | | |
| A 113A | 4 | | SHLD A113 | 25N | | | | E4 | 25N | | | 13 |
| A 113L | | | J3-N* | 19N | | | 3 | S1A- 1B | 25Y | | | 38 |
| A 113R | | | J3-N | 19N | | | 3 | S1A- 1A | 25Y | | | 38 |
| A 114 | 1 | | | | | A 10 | | | | | A 10 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

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GFL WIRING HARNESS A J 1900096

| CONDUCTOR | | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO | INDIVIDUAL LENGTH 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T/N 2 | TERMINATION SPEC 1 ITEM NO | NO | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T/N 2 | TERMINATION SPEC 1 ITEM NO. | NO |
| | | | | | | 7 8 | | | | | | |
| A 114A | 4 | | SHLD A114 | 25N | | | | E5 | 25N | | | 14 |
| A 114L | | | J3-P* | 19N | | | 3 | S1A- 3B | 25Y | | | 38 |
| A 114R | | | J3-P | 19N | | | 3 | S1A- 3A | 25Y | | | 38 |
| A 115 | 1 | | | | | A 10 | | | | | A 10 | |
| | | | | | | 7 8 | | | | | | |
| A 115A | 4 | | SHLD A115 | 25N | | | | E5 | 25N | | | 14 |
| A 115L | | | J3-R* | 19N | | | 3 | S8A- 4B | 25Y | | | 29 |
| A 115R | | | J3-R | 19N | | | 3 | S8A- 4A | 25Y | | | 29 |
| A 116 | 1 | | | | | A 10 | | | | | A 10 | |
| | | | | | | 7 8 | | | | | | |
| A 116A | 4 | | SHLD A116 | 25N | | | | E5 | 25N | | | 14 |
| A 116L | | | J3-S* | 19N | | | 3 | S2B- 4B | 25Y | | | 30 |
| A 116R | | | J3-S | 19N | | | 3 | S2B- 4A | 25Y | | | 30 |
| A 117 | 1 | | | | | A 10 | | | | | A 10 | |
| | | | | | | 7 8 | | | | | | |
| A 117A | 4 | | SHLD A117 | 25N | | | | E5 | 25N | | | 14 |
| A 117L | | | J3-T* | 19N | | | 3 | S1A- 4B | 25Y | | | 38 |

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GFL WIRING HARNESS A J 1900096

| CONDUCTOR | | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T/N 2 | TERMINATION SPEC. 1 ITEM NO | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T/N 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 117R | | | J3-T | 19N | | | 3 | S1A- 4A | 25Y | | | 38 |
| A 118 | 1 | | | | | A 10 | | | | | A 10 | |
| | | | | | | 7 8 | | | | | | |
| A 118A | 4 | | SHLD A118 | 25N | | | | E5 | 25N | | | 14 |
| A 118L | | | J3-U* | 19N | | | 3 | S1A- 5B | 25Y | | | 38 |
| A 118R | | | J3-U | 19N | | | 3 | S1A- 5A | 25Y | | | 38 |
| A 119 | 3 | | J3-AA | 19N | | | 3 | S2A- 1A | 25Y | | | 30 |
| A 120 | 3 | | J3-BB | 19N | | | 3 | S2A- 3A | 25Y | | | 30 |
| A 121 | 3 | | J3-CC | 19N | | | 3 | S2A- 2A | 25Y | | | 30 |
| A 122 | 3 | | J3-DD | 19N | | | 3 | S2A- 1B | 25Y | | | 30 |
| A 123 | 3 | | J3-EE | 19N | | | 3 | S2A- 3B | 25Y | | | 30 |
| A 124 | 29 | | | 56N | | A 30 | | | | | A 10 | |
| | | | | | | 15 16 | | | | | 5 6 | |
| A 124B | 3 | | P5-66 | 19N | | 18 | 43 | SHLD A124 | 25N | | | |
| A 124E | | | J4-A1 | 13N | | 14 | 4 | P5-15 | 19N | | 18 | 43 |
| A 124X | | | J4-A2 | | 28 | | 4 | SHLD A124 | | | | |
| A 125 | 29 | | | 56N | | A 30 | | | | | A 10 | |
| | | | | | | 15 16 | | | | | 5 6 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GFL WIRING HARNESS A J 1900096

| CONDUCTOR | | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO | INDIVIDUAL LENGTH 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T/N 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T/N 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 125B | 3 | | P5-64 | 19N | | 18 | 43 | SHLD A125 | 25N | | | |
| A 125E | | | J4-B1 | 13N | | 14 | 4 | P5-13 | 19N | | 18 | 43 |
| A 125X | | | J4-B2 | | 28 | | 4 | SHLD A125 | | | | |
| A 126 | 29 | | | 56N | | A 30 | | | | | A 10 | |
| | | | | | | 15 16 | | | | | 5 6 | |
| A 126B | 3 | | P5-62 | 19N | | 18 | 43 | SHLD A126 | 25N | | | |
| A 126E | | | J4-C1 | 13N | | 14 | 4 | P5- 9 | 19N | | 18 | 43 |
| A 126X | | | J4-C2 | | 28 | | 4 | SHLD A126 | | | | |
| A 127 | 29 | | | 56N | | A 30 | | | | | A 10 | |
| | | | | | | 15 16 | | | | | 5 6 | |
| A 127B | 3 | | P5-58 | 19N | | 18 | 43 | SHLD A127 | 25N | | | |
| A 127E | | | J4-D1 | 13N | | 14 | 4 | P5- 7 | 19N | | 18 | 43 |
| A 127X | | | J4-D2 | | 28 | | 4 | SHLD A127 | | | | |
| A 128 | 29 | | | 56N | | A 30 | | | | | A 10 | |
| | | | | | | 15 16 | | | | | 5 6 | |
| A 128B | 3 | | P5-60 | 19N | | 18 | 43 | SHLD A128 | 25N | | | |
| A 128E | | | J4-E1 | 13N | | 14 | 4 | P5- 5 | 19N | | 18 | 43 |
| A 128X | | | J4-E2 | | 28 | | 4 | SHLD A128 | | | | |

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GFL WIRING HARNESS A J 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | FROM CUT WIRE OR SHIELD 2 | FROM STRIP WIRE OR JACKET 2 | FROM TERMINATION SPEC 1 ITEM NO. | FROM NO. | TO CIRCUIT POINT | TO CUT WIRE OR SHIELD 2 | TO TERMINATION SPEC 1 ITEM NO. | TO NO. |
|---|---|---|---|---|---|---|---|---|---|---|
| A 129 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 129B | 3 | P5-50 | 19N | | 18 | 43 | SHLD A129 | 25N | | |
| A 129E | | J4-F1 | 13N | | 14 | 4 | P5- 3 | 19N | 18 | 43 |
| A 129X | | J4-F2 | | 28 | | 4 | SHLD A129 | | | |
| A 130 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 130B | 3 | P5-52 | 19N | | 18 | 43 | SHLD A130 | 25N | | |
| A 130E | | J4-G1 | 13N | | 14 | 4 | P5- 1 | 19N | 18 | 43 |
| A 130X | | J4-G2 | | 28 | | 4 | SHLD A130 | | | |
| A 131 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 131B | 3 | P5-22 | 19N | | 18 | 43 | SHLD A131 | 25N | | |
| A 131E | | J4-K1 | 13N | | 14 | 4 | XF2- 1 | 25Y | | 23 |
| A 131X | | J4-K2 | | 28 | | 4 | SHLD A131 | | | |
| A 132 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 132B | 3 | P5-14 | 19N | | 18 | 43 | SHLD A132 | 25N | | |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GFL WIRING HARNESS A J 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | FROM CUT WIRE OR SHIELD 2 | FROM STRIP WIRE OR JACKET 2 | FROM TERMINATION SPEC 1 ITEM NO. | FROM NO. | TO CIRCUIT POINT | TO CUT WIRE OR SHIELD 2 | TO TERMINATION SPEC 1 ITEM NO. | TO NO. |
|---|---|---|---|---|---|---|---|---|---|---|
| A 132E | | J4-J1 | 13N | | 14 | 4 | P5-63 | 19N | 18 | 43 |
| A 132X | | J4-J2 | | 28 | | 4 | SHLD A132 | | | |
| A 133 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 133B | 3 | P1-62 | 19N | | 18 | 40 | SHLD A133 | 25N | | |
| A 133E | | J5-A1 | 13N | | 14 | 5 | P1-25 | 19N | 18 | 40 |
| A 133X | | J5-A2 | | 28 | | 5 | SHLD A133 | | | |
| A 134 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 134B | 3 | P1-64 | 19N | | 18 | 40 | SHLD A134 | 25N | | |
| A 134E | | J5-B1 | 13N | | 14 | 5 | P1-23 | 19N | 18 | 40 |
| A 134X | | J5-B2 | | 28 | | 5 | SHLD A134 | | | |
| A 135 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 135B | 3 | P1-66 | 19N | | 18 | 40 | SHLD A135 | 25N | | |
| A 135E | | J5-C1 | 13N | | 14 | 5 | P1-21 | 19N | 18 | 40 |
| A 135X | | J5-C2 | | 28 | | 5 | SHLD A135 | | | |
| A 136 | 29 | | 56N | | A 30 | | | | A 10 | |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GFL WIRING HARNESS A J 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | FROM CUT WIRE OR SHIELD 2 | FROM STRIP WIRE OR JACKET 2 | FROM TERMINATION SPEC 1 ITEM NO. | FROM NO. | TO CIRCUIT POINT | TO CUT WIRE OR SHIELD 2 | TO TERMINATION SPEC 1 ITEM NO. | TO NO. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 15 16 | | | | 5 6 | |
| A 136B | 3 | P1-56 | 19N | | 18 | 40 | SHLD A136 | 25N | | |
| A 136E | | J5-D1 | 13N | | 14 | 5 | P1-19 | 19N | 18 | 40 |
| A 136X | | J5-D2 | | 28 | | 5 | SHLD A136 | | | |
| A 137 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 137B | 3 | P1-58 | 19N | | 18 | 40 | SHLD A137 | 25N | | |
| A 137E | | J5-E1 | 13N | | 14 | 5 | P1-17 | 19N | 18 | 40 |
| A 137X | | J5-E2 | | 28 | | 5 | SHLD A137 | | | |
| A 138 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 138B | 3 | P1-60 | 19N | | 18 | 40 | SHLD A138 | 25N | | |
| A 138E | | J5-F1 | 13N | | 14 | 5 | P1-13 | 19N | 18 | 40 |
| A 138X | | J5-F2 | | 28 | | 5 | SHLD A138 | | | |
| A 139 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 139B | 3 | P1-52 | 19N | | 18 | 40 | SHLD A139 | 25N | | |
| A 139E | | J5-G1 | 13N | | 14 | 5 | P1-11 | 19N | 18 | 40 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GFL WIRING HARNESS A J 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | FROM CUT WIRE OR SHIELD 2 | FROM STRIP WIRE OR JACKET 2 | FROM TERMINATION SPEC 1 ITEM NO. | FROM NO. | TO CIRCUIT POINT | TO CUT WIRE OR SHIELD 2 | TO TERMINATION SPEC 1 ITEM NO. | TO NO. |
|---|---|---|---|---|---|---|---|---|---|---|
| A 139X | | J5-G2 | | 28 | | 5 | SHLD A139 | | | |
| A 140 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 140B | 3 | P1-53 | 19N | | 18 | 40 | SHLD A140 | 25N | | |
| A 140E | | J5-H1 | 13N | | 14 | 5 | P1- 9 | 19N | 18 | 40 |
| A 140X | | J5-H2 | | 28 | | 5 | SHLD A140 | | | |
| A 141 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 141B | 3 | P1-54 | 19N | | 18 | 40 | SHLD A141 | 25N | | |
| A 141E | | J5-J1 | 13N | | 14 | 5 | P1- 7 | 19N | 18 | 40 |
| A 141X | | J5-J2 | | 28 | | 5 | SHLD A141 | | | |
| A 142 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 142B | 3 | P1-43 | 19N | | 18 | 40 | SHLD A142 | 25N | | |
| A 142E | | J6-A1 | 13N | | 14 | 6 | P1- 5 | 19N | 18 | 40 |
| A 142X | | J6-A2 | | 28 | | 6 | SHLD A142 | | | |
| A 143 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GFL WIRING HARNESS A J 1900096

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO | FROM CIRCUIT POINT | STRIP WIRE OR JACKET 2 | CUT WIRE OR SHIELD | TERMINATION SPEC 1 ITEM NO. | NO | TO CIRCUIT POINT | STRIP WIRE OR JACKET 2 | CUT WIRE OR SHIELD | TERMINATION SPEC 1 ITEM NO | NO |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A 143B | 3 | P1-44 | 19N | | 18 | 40 | SHLD A143 | 25N | | | |
| A 143E | | J6-B1 | 13N | | 14 | 6 | P1- 3 | 19N | | 18 | 40 |
| A 143X | | J6-B2 | | 28 | | 6 | SHLD A143 | | | | |
| A 144 | 29 | | 56N | | A 30 | | | | | A 10 | |
| | | | | | 15 16 | | | | | 5 6 | |
| A 144B | 3 | P1-24 | 19N | | 18 | 40 | SHLD A144 | 25N | | | |
| A 144E | | J6-C1 | 13N | | 14 | 6 | P1- 1 | 19N | | 18 | 40 |
| A 144X | | J6-C2 | | 28 | | 6 | SHLD A144 | | | | |
| A 145 | 29 | | 56N | | A 30 | | | | | A 10 | |
| | | | | | 15 16 | | | | | 5 6 | |
| A 145B | 3 | P1-22 | 19N | | 18 | 40 | SHLD A145 | 25N | | | |
| A 145E | | J6-D1 | 13N | | 14 | 6 | P1-61 | 19N | | 18 | 40 |
| A 145X | | J6-D2 | | 28 | | 6 | SHLD A145 | | | | |
| A 146 | 29 | | 56N | | A 30 | | | | | A 10 | |
| | | | | | 15 16 | | | | | 5 6 | |
| A 146B | 3 | P1-20 | 19N | | 18 | 40 | SHLD A146 | 25N | | | |
| A 146E | | J6-E1 | 13N | | 14 | 6 | P1-63 | 19N | | 18 | 40 |
| A 146X | | J6-E2 | | 28 | | 6 | SHLD A146 | | | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

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GFL WIRING HARNESS A J 1900096

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO | FROM CIRCUIT POINT | STRIP WIRE OR JACKET 2 | CUT WIRE OR SHIELD | TERMINATION SPEC 1 ITEM NO. | NO. | TO CIRCUIT POINT | STRIP WIRE OR JACKET 2 | CUT WIRE OR SHIELD | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A 147 | 29 | | 56N | | A 30 | | | | | A 10 | |
| | | | | | 15 16 | | | | | 5 6 | |
| A 147B | 3 | P1-18 | 19N | | 18 | 40 | SHLD A147 | 25N | | | |
| A 147E | | J6-F1 | 13N | | 14 | 6 | P1-65 | 19N | | 18 | 40 |
| A 147X | | J6-F2 | | 28 | | 6 | SHLD A147 | | | | |
| A 148 | 29 | | 56N | | A 30 | | | | | A 10 | |
| | | | | | 15 16 | | | | | 5 6 | |
| A 148B | 3 | P1-16 | 19N | | 18 | 40 | SHLD A148 | 25N | | | |
| A 148E | | J6-G1 | 13N | | 14 | 6 | P1-55 | 19N | | 18 | 40 |
| A 148X | | J6-G2 | | 28 | | 6 | SHLD A148 | | | | |
| A 149 | 29 | | 56N | | A 30 | | | | | A 10 | |
| | | | | | 15 16 | | | | | 5 6 | |
| A 149B | 3 | P1-14 | 19N | | 18 | 40 | SHLD A149 | 25N | | | |
| A 149E | | J6-H1 | 13N | | 14 | 6 | P1-57 | 19N | | 18 | 40 |
| A 149X | | J6-H2 | | 28 | | 6 | SHLD A149 | | | | |
| A 150 | 29 | | 56N | | A 30 | | | | | A 10 | |
| | | | | | 15 16 | | | | | 5 6 | |
| A 150B | 3 | P6- 3 | 19N | | 18 | 15 | SHLD A150 | 25N | | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GFL WIRING HARNESS A J 1900096

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO | FROM CIRCUIT POINT | STRIP WIRE OR JACKET 2 | CUT WIRE OR SHIELD | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CIRCUIT POINT | STRIP WIRE OR JACKET 2 | CUT WIRE OR SHIELD | TERMINATION SPEC 1 ITEM NO. | NO |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A 150E | | J7-A1 | 13N | | 14 | 7 | P6- 4 | 19N | | 18 | 15 |
| A 150X | | J7-A2 | | 28 | | 7 | SHLD A150 | | | | |
| A 151 | 29 | | 56N | | A 30 | | | | | A 10 | |
| | | | | | 15 16 | | | | | 5 6 | |
| A 151B | 3 | P2-36 | 19N | | 17 | 41 | SHLD A151 | 25N | | | |
| A 151E | | J7-B1 | 13N | | 14 | 7 | P2-51 | 19N | | 18 | 41 |
| A 151X | | J7-B2 | | 28 | | 7 | SHLD A151 | | | | |
| A 152 | 29 | | 56 | | A 30 | | | | | A 10 | |
| | | | | | 15 16 | | | | | 5 6 | |
| A 152B | 3 | P2-26 | 19N | | 17 | 41 | SHLD A152 | 25N | | | |
| A 152E | | J7-C1 | 13N | | 14 | 7 | P2-49 | 19N | | 18 | 41 |
| A 152X | | J7-C2 | | 28 | | 7 | SHLD A152 | | | | |
| A 153 | 29 | | 56N | | A 30 | | | | | A 10 | |
| | | | | | 15 16 | | | | | 5 6 | |
| A 153B | 3 | P2-28 | 19N | | 17 | 41 | SHLD A153 | 25N | | | |
| A 153E | | J7-D1 | 13N | | 14 | 7 | P2-48 | 19N | | 18 | 41 |
| A 153X | | J7-D2 | | 28 | | 7 | SHLD A153 | | | | |
| A 154 | 29 | | 56N | | A 30 | | | | | A 10 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GFL WIRING HARNESS A J 1900096

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | FROM CIRCUIT POINT | STRIP WIRE OR JACKET 2 | CUT WIRE OR SHIELD | TERMINATION SPEC. 1 ITEM NO | NO. | TO CIRCUIT POINT | STRIP WIRE OR JACKET 2 | CUT WIRE OR SHIELD | TERMINATION SPEC 1 ITEM NO. | NO |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 15 16 | | | | | 5 6 | |
| A 154B | 3 | P2-30 | 19N | | 17 | 41 | SHLD A154 | 25N | | | |
| A 154E | | J7-E1 | 13N | | 14 | 7 | P2-44 | 19N | | 18 | 41 |
| A 154X | | J7-E2 | | 28 | | 7 | SHLD A154 | | | | |
| A 155 | 29 | | 56N | | A 30 | | | | | A 10 | |
| | | | | | 15 16 | | | | | 5 6 | |
| A 155B | 3 | P2-20 | 19N | | 17 | 41 | SHLD A155 | 25N | | | |
| A 155E | | J7-F1 | 13N | | 14 | 7 | P2-43 | 19N | | 18 | 41 |
| A 155X | | J7-F2 | | 28 | | 7 | SHLD A155 | | | | |
| A 156 | 29 | | | | A 30 | | | | | A 10 | |
| | | | | | 15 16 | | | | | 5 6 | |
| A 156B | 3 | P2-22 | 19N | | 17 | 41 | SHLD A156 | 25N | | | |
| A 156E | | J7-G1 | 13N | | 14 | 7 | P2-39 | 19N | | 18 | 41 |
| A 156X | | J7-G2 | | 28 | | 7 | SHLD A156 | | | | |
| A 157 | 29 | | 56N | | A 30 | | | | | A 10 | |
| | | | | | 15 16 | | | | | 5 6 | |
| A 157B | 3 | P2-23 | 19N | | 17 | 41 | SHLD A157 | 25N | | | |
| A 157E | | J7-H1 | 13N | | 14 | 7 | P2- 6 | 19N | | 18 | 41 |

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GFL WIRING HARNESS A J 1900096

| NUMBER | ITEM NO. | 2 | FROM CIRCUIT POINT | 2 | T N | TERMINATION SPEC 1 ITEM NO. | | NO. | TO CIRCUIT POINT | 2 | T N | TERMINATION SPEC 1 ITEM NO. | | NO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 157X | | | J7-H2 | | 28 | | | 7 | SHLD A157 | | | | | |
| A 158 | 29 | | | 56N | | A | 30 | | | | | A | 10 | |
| | | | | | | 15 | 16 | | | | | 5 | 6 | |
| A 158B | 3 | | P2-24 | 19N | | 17 | | 41 | SHLD A158 | 25N | | | | |
| A 158E | | | J7-J1 | 13N | | 14 | | 7 | P2- 5 | 19N | | 18 | | 41 |
| A 158X | | | J7-J2 | | 28 | | | 7 | SHLD A158 | | | | | |
| A 159 | 29 | | | 56N | | A | 30 | | | | | A | 10 | |
| | | | | | | 15 | 16 | | | | | 5 | 6 | |
| A 159B | 3 | | P2-13 | 19N | | 17 | | 41 | SHLD A159 | 25N | | | | |
| A 159E | | | J8-A1 | 13N | | 14 | | 8 | P2- 4 | 19N | | 18 | | 41 |
| A 159X | | | J8-A2 | | 28 | | | 8 | SHLD A159 | | | | | |
| A 160 | 29 | | | 56 | | A | 30 | | | | | A | 10 | |
| | | | | | | 15 | 16 | | | | | 5 | 6 | |
| A 160B | 3 | | P2-14 | 19N | | 17 | | 41 | SHLD A160 | 25N | | | | |
| A 160E | | | J8-B1 | 13N | | 14 | | 8 | P2- 3 | 19N | | 18 | | 41 |
| A 160X | | | J8-B2 | | 28 | | | 8 | SHLD A160 | | | | | |
| A 161 | 29 | | | 56N | | A | 30 | | | | | A | 10 | |
| | | | | | | 15 | 16 | | | | | 5 | 6 | |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GFL WIRING HARNESS A J 1900096

| NUMBER | ITEM NO. | 2 | FROM CIRCUIT POINT | 2 | T N | TERMINATION SPEC 1 ITEM NO. | | NO | TO CIRCUIT POINT | 2 | T N | TERMINATION SPEC 1 ITEM NO. | | NO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 161B | 3 | | P2-15 | 19N | | 17 | | 41 | SHLD A161 | 25N | | | | |
| A 161E | | | J8-C1 | 13N | | 14 | | 8 | P2- 2 | 19N | | 18 | | 41 |
| A 161X | | | J8-C2 | | 28 | | | 8 | SHLD A161 | | | | | |
| A 162 | 29 | | | 56N | | A | 30 | | | | | A | 10 | |
| | | | | | | 15 | 16 | | | | | 5 | 6 | |
| A 162B | 3 | | P2-50 | 19N | | 17 | | 41 | SHLD A162 | 25N | | | | |
| A 162E | | | J8-D1 | 13N | | 14 | | 8 | P2- 1 | 19N | | 18 | | 41 |
| A 162X | | | J8-D2 | | 28 | | | 8 | SHLD A162 | | | | | |
| A 163 | 29 | | | 56N | | A | 30 | | | | | A | 10 | |
| | | | | | | 15 | 16 | | | | | 5 | 6 | |
| A 163B | 3 | | P2-47 | 19N | | 17 | | 41 | SHLD A163 | 25N | | | | |
| A 163E | | | J8-E1 | 13N | | 14 | | 8 | P2-35 | 19N | | 18 | | 41 |
| A 163X | | | J8-E2 | | 28 | | | 8 | SHLD A163 | | | | | |
| A 164 | 29 | | | 56N | | A | 30 | | | | | A | 10 | |
| | | | | | | 15 | 16 | | | | | 5 | 6 | |
| A 164B | 3 | | P2-46 | 19N | | 17 | | 41 | SHLD A164 | 25N | | | | |
| A 164E | | | J8-F1 | 13N | | 14 | | 8 | P2-25 | 19N | | 18 | | 41 |
| A 164X | | | J8-F2 | | 28 | | | 8 | SHLD A164 | | | | | |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GFL WIRING HARNESS A J 1900096

| NUMBER | ITEM NO. | 2 | FROM CIRCUIT POINT | 2 | T N | TERMINATION SPEC 1 ITEM NO. | | NO. | TO CIRCUIT POINT | 2 | T N | TERMINATION SPEC 1 ITEM NO. | | NO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 165 | 29 | | | 56N | | A | 30 | | | | | A | 10 | |
| | | | | | | 15 | 16 | | | | | 5 | 6 | |
| A 165B | 3 | | P2-45 | 19N | | 17 | | 41 | SHLD A165 | 25N | | | | |
| A 165E | | | J8-G1 | 13N | | 14 | | 8 | P2-27 | 19N | | 18 | | 41 |
| A 165X | | | J8-G2 | | 28 | | | 8 | SHLD A165 | | | | | |
| A 166 | 29 | | | 56N | | A | 30 | | | | | A | 10 | |
| | | | | | | 15 | 16 | | | | | 5 | 6 | |
| A 166B | 3 | | P2-42 | 19N | | 17 | | 41 | SHLD A166 | 25N | | | | |
| A 166E | | | J8-H1 | 13N | | 14 | | 8 | P2-29 | 19N | | 18 | | 41 |
| A 166X | | | J8-H2 | | 28 | | | 8 | SHLD A166 | | | | | |
| A 167 | 29 | | | 56N | | A | 30 | | | | | A | 10 | |
| | | | | | | 15 | 16 | | | | | 5 | 6 | |
| A 167B | 3 | | P2-41 | 19N | | 17 | | 41 | SHLD A167 | 25N | | | | |
| A 167E | | | J8-J1 | 13N | | 14 | | 8 | P2-19 | 19N | | 18 | | 41 |
| A 167X | | | J8-J2 | | 28 | | | 8 | SHLD A167 | | | | | |
| A 168 | 29 | | | 56N | | A | 30 | | | | | A | 10 | |
| | | | | | | 15 | 16 | | | | | 5 | 6 | |
| A 168B | 3 | | P6- 7 | 19N | | 18 | | 15 | SHLD A168 | 25N | | | | |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GFL WIRING HARNESS A J 1900096

| NUMBER | ITEM NO. | 2 | FROM CIRCUIT POINT | 2 | T N | TERMINATION SPEC 1 ITEM NO. | | NO. | TO CIRCUIT POINT | 2 | T N | TERMINATION SPEC 1 ITEM NO. | | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 168E | | | J9-A1 | 13N | | 14 | | 9 | P6- 8 | 19N | | 18 | | 15 |
| A 168X | | | J9-A2 | | 28 | | | 9 | SHLD A168 | | | | | |
| A 169 | 29 | | | 56N | | A | 30 | | | | | A | 10 | |
| | | | | | | 15 | 16 | | | | | 5 | 6 | |
| A 169B | 3 | | P6-10 | 19N | | 18 | | 15 | SHLD A169 | 25N | | | | |
| A 169E | | | J9-B1 | 13N | | 14 | | 9 | P6- 9 | 19N | | 18 | | 15 |
| A 169X | | | J9-B2 | | 28 | | | 9 | SHLD A169 | | | | | |
| A 170 | 29 | | | 56N | | A | 30 | | | | | A | 10 | |
| | | | | | | 15 | 16 | | | | | 5 | 6 | |
| A 170B | 3 | | P5-12 | 19N | | 18 | | 43 | SHLD A170 | 25N | | | | |
| A 170E | | | J9-C1 | 13N | | 14 | | 9 | P5-61 | 19N | | 18 | | 43 |
| A 170X | | | J9-C2 | | | 28 | | 9 | SHLD A170 | | | | | |
| A 171 | 29 | | | 56N | | A | 30 | | | | | A | 10 | |
| | | | | | | 15 | 16 | | | | | 5 | 6 | |
| A 171B | 3 | | P5-11 | 19N | | 18 | | 43 | SHLD A171 | 25N | | | | |
| A 171E | | | J9-D1 | 13N | | 14 | | 9 | P5-55 | 19N | | 18 | | 43 |
| A 171X | | | J9-D2 | | 28 | | | 9 | SHLD A171 | | | | | |
| A 172 | 29 | | | 56 | | A | 30 | | | | | A | 10 | |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE - NONE | REV LTR J | SHEET 32 OF 51

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T 2 | TERMINATION SPEC. ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TERMINATION SPEC ITEM NO | NO |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 15 16 | | | | 5 6 | |
| A 172B | 3 | P5- 8 | 19N | | 18 | 43 | SHLD A172 | 25N | | |
| A 172E | | J9-E1 | 13N | | 14 | 9 | P5-57 | 19N | 18 | 43 |
| A 172X | | J9-E2 | | 28 | | 9 | SHLD A172 | | | |
| A 173 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 173B | 3 | P5- 6 | 19N | | 18 | 43 | SHLD A173 | 25N | | |
| A 173E | | J9-F1 | 13N | | 14 | 9 | P5-59 | 19N | 18 | 43 |
| A 173X | | J9-F2 | | 28 | | 9 | SHLD A173 | | | |
| A 174 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 174B | 3 | P5- 4 | 19N | | 18 | 43 | SHLD A174 | 25N | | |
| A 174E | | J9-G1 | 13N | | 14 | 9 | P5-49 | 19N | 18 | 43 |
| A 174X | | J9-G2 | | 28 | | 9 | SHLD A174 | | | |
| A 175 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 175B | 3 | P5- 2 | 19N | | 18 | 43 | SHLD A175 | 25N | | |
| A 175E | | J9-H1 | 13N | | 14 | 9 | P5-51 | 19N | 18 | 43 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE - NONE | REV LTR J | SHEET 33 OF 51

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| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T 2 | TERMINATION SPEC. ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TERMINATION SPEC ITEM NO | NO |
|---|---|---|---|---|---|---|---|---|---|---|
| A 175X | | J9-H2 | | 28 | | 9 | SHLD A175 | | | |
| A 176 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 176B | 3 | P3-11 | 19N | | 18 | 42 | SHLD A176 | 25N | | |
| A 176E | | J10-A1 | 13N | | 14 | 10 | P3-58 | 19N | 18 | 42 |
| A 176X | | J10-A2 | | 28 | | 10 | SHLD A176 | | | |
| A 177 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 177B | 3 | P3- 9 | 19N | | 18 | 42 | SHLD A177 | 25N | | |
| A 177E | | J10-B1 | 13N | | 14 | 10 | P3-50 | 19N | 18 | 42 |
| A 177X | | J10-B2 | | 28 | | 10 | SHLD A177 | | | |
| A 178 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 178B | 3 | P3- 7 | 19N | | 18 | 42 | SHLD A178 | 25N | | |
| A 178E | | J10-C1 | 13N | | 14 | 10 | P3-52 | 19N | 18 | 42 |
| A 178X | | J10-C2 | | 28 | | 10 | SHLD A178 | | | |
| A 179 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE - NONE | REV LTR J | SHEET 34 OF 51

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| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T 2 | TERMINATION SPEC. ITEM NO | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TERMINATION SPEC ITEM NO | NO |
|---|---|---|---|---|---|---|---|---|---|---|
| A 179B | 3 | P3- 5 | 19N | | 18 | 42 | SHLD A179 | 25N | | |
| A 179E | | J10-D1 | 13N | | 14 | 10 | P3-54 | 19N | 18 | 42 |
| A 179X | | J10-D2 | | 28 | | 10 | SHLD A179 | | | |
| A 180 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 180B | 3 | P3- 3 | 19N | | 18 | 42 | SHLD A180 | 25N | | |
| A 180E | | J10-E1 | 13N | | 14 | 10 | P3-44 | 19N | 18 | 42 |
| A 180X | | J10-E2 | | 28 | | 10 | SHLD A180 | | | |
| A 181 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 181B | 3 | P3- 1 | 19N | | 17 | 42 | SHLD A181 | 25N | | |
| A 181E | | J10-F1 | 13N | | 14 | 10 | P3-46 | 19N | 17 | 42 |
| A 181X | | J10-F2 | | 28 | | 10 | SHLD A181 | | | |
| A 182 | 3 | J11- 1 | 19N | | 17 | 20 | P1-25 | 19N | | 40 |
| A 183 | 3 | J11- 2 | 19N | | 17 | 20 | P3-24 | 19N | 17 | 42 |
| A 184 | 3 | J11- 3 | 19N | | 17 | 20 | P2-51 | 19N | | 41 |
| A 185 | 3 | J11- 4 | 19N | | 17 | 20 | P1-23 | 19N | | 40 |
| A 186 | 3 | J11- 5 | 19N | | 17 | 20 | P3-22 | 19N | 17 | 42 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE - NONE | REV LTR J | SHEET 35 OF 51

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| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T 2 | TERMINATION SPEC. ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|
| A 187 | 3 | J11- 6 | 19N | | 17 | 20 | P2-49 | 19N | | 41 |
| A 188 | 3 | J11- 7 | 19N | | 17 | 20 | P1-21 | 19N | | 40 |
| A 189 | 3 | J11- 8 | 19N | | 17 | 20 | P3-20 | 19N | 17 | 42 |
| A 190 | 3 | J11- 9 | 19N | | 17 | 20 | P2-48 | 19N | | 41 |
| A 191 | 3 | J11-10 | 19N | | 17 | 20 | P1-19 | 19N | | 40 |
| A 192 | 3 | J11-11 | 19N | | 17 | 20 | P3-18 | 19N | 17 | 42 |
| A 193 | 3 | J11-12 | 19N | | 17 | 20 | P2-44 | 19N | | 41 |
| A 194 | 3 | J11-13 | 19N | | 17 | 20 | P1-17 | 19N | | 40 |
| A 195 | 3 | J11-14 | 19N | | 17 | 20 | P3-16 | 19N | 17 | 42 |
| A 196 | 3 | J11-15 | 19N | | 17 | 20 | P2-43 | 19N | | 41 |
| A 197 | 3 | J11-16 | 19N | | 17 | 20 | P1-13 | 19N | | 40 |
| A 198 | 3 | J11-17 | 19N | | 17 | 20 | P3-14 | 19N | 17 | 42 |
| A 199 | 3 | J11-18 | 19N | | 17 | 20 | P2-39 | 19N | | 41 |
| A 200 | 3 | J11-19 | 19N | | 17 | 20 | P1-11 | 19N | | 40 |
| A 201 | 3 | J11-20 | 19N | | 17 | 20 | P3-12 | 19N | 17 | 42 |
| A 202 | 3 | J11-21 | 19N | | 17 | 20 | P2- 6 | 19N | | 41 |
| A 203 | 3 | J11-22 | 19N | | 17 | 20 | P1- 9 | 19N | | 40 |
| A 204 | 3 | J11-23 | 19N | | 17 | 20 | P3-10 | 19N | 17 | 42 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE - NONE | REV LTR J | SHEET 36 OF 51

GFL WIRING HARNESS A J 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET | TERMINATION SPEC. ITEM NO. | NO. | TO CIRCUIT POINT | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET | TERMINATION SPEC. ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 205 | 3 | J11-24 | 19N | 17 | 20 | P2- 5 | 19N | | 41 |
| A 206 | 3 | J11-25 | 19N | 17 | 20 | P1- 7 | 19N | | 40 |
| A 207 | 3 | J11-26 | 19N | 17 | 20 | P3- 8 | 19N | 17 | 42 |
| A 208 | 3 | J11-27 | 19N | 17 | 20 | P2- 4 | 19N | | 41 |
| A 209 | 3 | J11-28 | 19N | 17 | 20 | P1- 5 | 19N | | 40 |
| A 210 | 3 | J11-29 | 19N | 17 | 20 | P3- 6 | 19N | 17 | 42 |
| A 211 | 3 | J11-30 | 19N | 17 | 20 | P2- 3 | 19N | | 41 |
| A 212 | 3 | J11-31 | 19N | 17 | 20 | P1- 3 | 19N | | 40 |
| A 213 | 3 | J11-32 | 19N | 17 | 20 | P3- 4 | 19N | 17 | 42 |
| A 214 | 3 | J11-33 | 19N | 17 | 20 | P2- 2 | 19N | | 41 |
| A 215 | 3 | J11-34 | 19N | 17 | 20 | P1- 1 | 19N | | 40 |
| A 216 | 3 | J11-35 | 19N | 17 | 20 | P3- 2 | 19N | 17 | 42 |
| A 217 | 3 | J11-36 | 19N | 17 | 20 | P2- 1 | 19N | | 41 |
| A 218 | 3 | J11-37 | 19N | 17 | 20 | P1-61 | 19N | | 40 |
| A 219 | 3 | J11-38 | 19N | 17 | 20 | P3-61 | 19N | 17 | 42 |
| A 220 | 3 | J11-39 | 19N | 17 | 20 | P2-35 | 19N | | 41 |
| A 221 | 3 | J11-40 | 19N | 17 | 20 | P1-63 | 19N | | 40 |
| A 222 | 3 | J11-41 | 19N | 17 | 20 | P3-62 | 19N | 17 | 42 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE - NONE | REV LTR J | SHEET 37 OF 51

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GFL WIRING HARNESS A J 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET | TERMINATION SPEC. ITEM NO. | NO. | TO CIRCUIT POINT | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET | TERMINATION SPEC. ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 223 | 3 | J11-42 | 19N | 17 | 20 | P2-25 | 19N | | 41 |
| A 224 | 3 | J11-43 | 19N | 17 | 20 | P1-65 | 19N | | 40 |
| A 225 | 3 | J11-44 | 19N | 17 | 20 | P3-64 | 19N | 17 | 42 |
| A 226 | 3 | J11-45 | 19N | 17 | 20 | P2-27 | 19N | | 41 |
| A 227 | 3 | J11-46 | 19N | 17 | 20 | P1-55 | 19N | | 40 |
| A 228 | 3 | J11-47 | 19N | 17 | 20 | P3-66 | 19N | 17 | 42 |
| A 229 | 3 | J11-48 | 19N | 17 | 20 | P2-29 | 19N | | 41 |
| A 230 | 3 | J11-49 | 19N | 17 | 20 | P1-57 | 19N | | 40 |
| A 231 | 3 | J11-50 | 19N | 17 | 20 | P3-56 | 19N | 17 | 42 |
| A 232 | 3 | J11-51 | 19N | 17 | 20 | P2-19 | 19N | | 41 |
| A 236 | 3 | J12- 1 | 19N | 17 | 19 | P2-52 | 19N | 18 | 41 |
| A 237 | 3 | J12- 2 | 19N | 17 | 19 | P2-53 | 19N | 18 | 41 |
| A 238 | 3 | J12- 3 | 19N | 17 | 19 | P2-54 | 19N | 18 | 41 |
| A 239 | 3 | J12- 4 | 19N | 17 | 19 | P2-55 | 19N | 18 | 41 |
| A 240 | 3 | J12- 5 | 19N | 17 | 19 | P2-56 | 19N | 18 | 41 |
| A 241 | 3 | J12- 6 | 19N | 17 | 19 | P2-57 | 19N | 18 | 41 |
| A 242 | 3 | J12- 7 | 19N | 17 | 19 | P2-58 | 19N | 18 | 41 |
| A 243 | 3 | J12- 8 | 19N | 17 | 19 | P2-59 | 19N | 18 | 41 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE - NONE | REV LTR J | SHEET 38 OF 51

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GFL WIRING HARNESS A J 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET | TERMINATION SPEC. ITEM NO. | NO. | TO CIRCUIT POINT | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET | TERMINATION SPEC. ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 244 | 3 | J12- 9 | 19N | 17 | 19 | P2-60 | 19N | 18 | 41 |
| A 245 | 3 | J12-10 | 19N | 18 | 19 | P7-38 | 19N | 17 | 16 |
| A 246 | 3 | J12-11 | 19N | 18 | 19 | P2-61 | 19N | 18 | 41 |
| A 247 | 3 | J12-11 | 19N | 18 | 19 | S2A- 1A | 25Y | | 30 |
| A 248 | 3 | J12-12 | 19N | 18 | 19 | P2-62 | 19N | 18 | 41 |
| A 249 | 3 | J12-12 | 19N | 18 | 19 | S2A- 3A | 25Y | | 30 |
| A 250 | 3 | J12-16 | 19N | 18 | 19 | P3-48 | 19N | 18 | 42 |
| A 251 | 3 | J12-17 | 19N | 18 | 19 | P3-37 | 19N | 18 | 42 |
| A 252 | 3 | J12-18 | 19N | 18 | 19 | P3-38 | 19N | 18 | 42 |
| A 253 | 3 | J12-19 | 19N | 18 | 19 | P3-39 | 19N | 18 | 42 |
| A 254 | 3 | J12-20 | 19N | 18 | 19 | P3-40 | 19N | 18 | 42 |
| A 255 | 3 | J12-21 | 19N | 18 | 19 | P3-41 | 19N | 18 | 42 |
| A 256 | 3 | J12-22 | 19N | 18 | 19 | P3-42 | 19N | 18 | 42 |
| A 257 | 3 | J12-23 | 19N | 18 | 19 | P3-32 | 19N | 18 | 42 |
| A 258 | 3 | J12-24 | 19N | 18 | 19 | P3-33 | 19N | 18 | 42 |
| A 259 | 3 | J12-26 | 19N | 18 | 19 | P3-34 | 19N | 17 | 42 |
| A 260 | 3 | J12-27 | 19N | 18 | 19 | P3-31 | 19N | 17 | 42 |
| A 261 | 3 | J12-28 | 19N | 18 | 19 | P5-40 | 19N | 17 | 43 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE - NONE | REV LTR J | SHEET 39 OF 51

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GFL WIRING HARNESS A J 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET | TERMINATION SPEC. ITEM NO. | NO. | TO CIRCUIT POINT | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET | TERMINATION SPEC. ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 262 | 3 | J12-29 | 19N | 18 | 19 | P5-18 | 19N | 17 | 43 |
| A 263 | 3 | J12-30 | 19N | 18 | 19 | P7-10 | 19N | 17 | 16 |
| A 264 | 3 | P1-14 | 19N | | 40 | P3-15 | 19N | 17 | 42 |
| A 265 | 3 | P1-16 | 19N | | 40 | P3-17 | 19N | 17 | 42 |
| A 266 | 3 | P1-18 | 19N | 18 | 40 | P3-19 | 19N | 17 | 42 |
| A 267 | 3 | P1-20 | 19N | | 40 | P3-21 | 19N | 17 | 42 |
| A 268 | 3 | P1-22 | 19N | | 40 | P3-23 | 19N | 17 | 42 |
| A 269 | 3 | P1-24 | 19N | | 40 | P3-25 | 19N | 17 | 42 |
| A 270 | 3 | P1-43 | 19N | | 40 | P3-45 | 19N | 17 | 42 |
| A 271 | 3 | P1-44 | 19N | | 40 | P3-47 | 19N | 17 | 42 |
| A 272 | 1 | | | A 10 | | | | A 10 | |
| | | | | | | | | 7 8 | |
| A 272B | 4 | E27 | 25N | | 11 | SHLD A272 | 25N | | |
| A 272L | | P1-35 | 19N | 17 | 40 | P6- 2 | 19N | 17 | 15 |
| A 272R | | P1-50 | 19N | 17 | 40 | P6- 1 | 19N | 17 | 15 |
| A 273 | 3 | P1-52 | 19N | | 40 | P3-51 | 19N | 17 | 42 |
| A 274 | 3 | P1-53 | 19N | | 40 | P3-53 | 19N | 17 | 42 |
| A 275 | 3 | P1-54 | 19N | | 40 | P3-43 | 19N | 17 | 42 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE - NONE | REV LTR J | SHEET 40 OF 51

GFL WIRING HARNESS A J 1900096

| CONDUCTOR INDIVIDUAL LENGTH |  | FROM |  |  |  | TO |  |  |  |
|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | TERMINATION SPEC ITEM NO | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | TERMINATION SPEC ITEM NO | NO |
| A 276 | 3 | P1-56 | 19N |  | 40 | P3-57 | 19N | 17 | 42 |
| A 277 |  | P1-58 | 19N |  | 40 | F3-59 | 19N | 17 | 42 |
| A 278 |  | P1-60 | 19N |  | 40 | P3-49 | 19N | 17 | 42 |
| A 279 | 3 | P1-62 | 19N |  | 40 | P3-63 | 19N | 17 | 42 |
| A 280 | 3 | P1-64 | 19N |  | 40 | P3-65 | 19N | 17 | 42 |
| A 281 | 3 | P1-66 | 19N |  | 40 | P3-55 | 19N | 17 | 42 |
| A 282 |  | DELETED |  |  |  |  |  |  |  |
| A 283 | 1 |  |  | A 10 |  |  |  | A 10<br>7 8 |  |
| A 283B | 3 | E27 | 25N |  | 11 | SHLD A283 | 25N |  |  |
| A 283L |  | P2-40 | 19N | 17 | 41 | P6- 6 | 19N | 17 | 15 |
| A 283R |  | P2-21 | 19N | 17 | 41 | P6- 5 | 19N | 17 | 15 |
| A 284 | 3 | P3-13 | 19N | 17 | 42 | P6-19 | 19N | 17 | 15 |
| A 285 | 3 | P3-26 | 19N | 17 | 42 | S10SW2-NC | 25Y |  | 26 |
| A 286 | 3 | P3-32 | 19N | 18 | 42 | P5-38 | 19N | 17 | 43 |
| A 287 | 3 | P3-33 | 19N | 18 | 42 | P5-39 | 19N | 17 | 43 |
| A 288 | 3 | P3-37 | 19N | 18 | 42 | P5-44 | 19N | 17 | 43 |
| A 289 | 3 | P3-38 | 19N | 18 | 42 | P5-45 | 19N | 17 | 43 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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|---|---|---|
| MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096 |
| SCALE-NONE | REV LTR J | SHEET 41 OF 51 |

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GFL WIRING HARNESS A J 1900096

| CONDUCTOR INDIVIDUAL LENGTH |  | FROM |  |  |  | TO |  |  |  |
|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | TERMINATION SPEC ITEM NO | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | TERMINATION SPEC ITEM NO | NO. |
| A 290 | 3 | P3-39 | 19N | 18 | 42 | P5-46 | 19N | 17 | 43 |
| A 291 | 3 | P3-40 | 19N | 18 | 42 | P5-47 | 19N | 17 | 43 |
| A 292 | 3 | P3-41 | 19N | 18 | 42 | P5-48 | 19N | 17 | 43 |
| A 293 | 3 | P3-42 | 19N | 18 | 42 | P5-37 | 19N | 17 | 43 |
| A 294 | 3 | P3-48 | 19N | 18 | 42 | P5-43 | 19N | 17 | 43 |
| A 296 |  | P3-60 | 19N | 17 | 42 | P6-17 | 19N | 17 | 15 |
| A 297 | 3 | P5-17 | 19N | 17 | 43 | S10SW2-NO | 25Y |  | 26 |
| A 298 | 1 |  |  | A 10 |  |  |  | A 10<br>7 8 |  |
| A 298B | 4 | E27 | 25N |  | 11 | SHLD A298 | 25N |  |  |
| A 298L |  | P5-10 | 19N | 17 | 43 | P6-20 | 19N | 17 | 15 |
| A 298R |  | P5-56 | 19N | 17 | 43 | P6-18 | 19N | 17 | 15 |
| A 299 | 2 |  |  | 11 |  |  |  | 5 6 10 |  |
| A 299B | 4 | E28 | 25N |  | 33 | SHLD A299 | 25N |  |  |
| A 299W |  | P5-53 | 19N | 17 | 43 | XF2- 2 | 25Y |  | 24 |
| A 300 | 1 |  |  | A 10<br>7 8 |  |  |  | A 10 |  |
| A 300A | 4 | SHLD A300 | 25N |  |  | E27 | 25N |  | 11 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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|---|---|---|
| MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096 |
| SCALE-NONE | REV LTR J | SHEET 42 OF 51 |

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GFL WIRING HARNESS A N 1900096

| CONDUCTOR INDIVIDUAL LENGTH |  | FROM |  |  |  | TO |  |  |  |
|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | TERMINATION SPEC. ITEM NO | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | TERMINATION SPEC ITEM NO. | NO. |
| A 300L |  | P6-12 | 19N | 17 | 15 | S3A-11B | 25Y |  | 39 |
| A 300R |  | P6-11 | 19N | 17 | 15 | S3A-11A | 25Y |  | 39 |
| A 301 | 3 | P6-15 | 19N | 17 | 15 | S10SW1-NO | 25Y |  | 26 |
| A 302 | 3 | P6-22 | 19N | 17 | 15 | S13SW3-NO | 25Y |  | 27 |
| A 303 | 3 | P6-23 | 19N | 17 | 15 | S12SW1-NO | 25Y |  | 25 |
| A 304 | 3 | P6-24 | 19N | 17 | 15 | S12SW1-NC | 25Y |  | 25 |
| A 305 | 3 | P6-25 | 19N | 17 | 15 | S12SW1-C | 25Y |  | 25 |
| A 306 | 3 | P6-26 | 19N | 17 | 15 | XDS6-A | 25Y |  | 25 |
| A 307 | 3 | P6-27 | 19N | 17 | 15 | S9SW1-NO | 25Y |  | 25 |
| A 308 | 3 | P6-28 | 19N | 18 | 15 | S9SW1-C | 25Y |  | 25 |
| A 309 | 3 | P6-46 | 19N | 18 | 15 | S10SW2-C | 25Y |  | 26 |
| A 310 | 3 | P6-47 | 19N | 17 | 15 | S2A-5B | 25Y |  | 30 |
| A 311 | 3 | P6-52 | 19N | 17 | 15 | S7A-11A | 25Y |  | 31 |
| A 312 | 3 | P6-59 | 19N | 17 | 15 | S6A-11A | 25Y |  | 32 |
| A 313 | 3 | P6-58 | 19N | 17 | 15 | S5SW1-NC | 25Y |  | 36 |
| A 314 | 3 | P7- 1 | 19N | 18 | 16 | S6A- 2A | 25Y |  | 32 |
| A 315 | 3 | P7- 2 | 19N | 18 | 16 | S6A- 3A | 25Y |  | 32 |
| A 316 | 3 | P7- 3 | 19N | 18 | 16 | S6A- 4A | 25Y |  | 32 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

|  |  |  |
|---|---|---|
| MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096 |
| SCALE-NONE | REV LTR N | SHEET 43 OF 51 |

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GFL WIRING HARNESS A J 1900096

| CONDUCTOR INDIVIDUAL LENGTH |  | FROM |  |  |  | TO |  |  |  |
|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | TERMINATION SPEC. ITEM NO | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | TERMINATION SPEC ITEM NO. | NO |
| A 317 | 3 | P7- 4 | 19N | 18 | 16 | S6A- 5A | 25Y |  | 32 |
| A 318 | 3 | P7- 5 | 19N | 18 | 16 | S6A- 6A | 25Y |  | 32 |
| A 319 | 3 | P7- 6 | 19N | 18 | 16 | S6A- 7A | 25Y |  | 32 |
| A 320 | 3 | P7- 7 | 19N | 18 | 16 | S6A- 8A | 25Y |  | 32 |
| A 321 | 3 | P7- 8 | 19N | 18 | 16 | S6A- 9A | 25Y |  | 32 |
| A 322 | 3 | P7- 9 | 19N | 18 | 16 | S6A-10A | 25Y |  | 32 |
| A 323 | 3 | P7-29 | 19N | 17 | 16 | S7A-10A | 25Y |  | 31 |
| A 324 | 3 | P7-30 | 19N | 17 | 16 | S7A- 9A | 25Y |  | 31 |
| A 325 | 3 | P7-31 | 19N | 17 | 16 | S7A- 8A | 25Y |  | 31 |
| A 326 | 3 | P7-32 | 19N | 17 | 16 | S7A- 7A | 25Y |  | 31 |
| A 327 | 3 | P7-33 | 19N | 17 | 16 | S7A- 6A | 25Y |  | 31 |
| A 328 | 3 | P7-34 | 19N | 17 | 16 | S7A- 5A | 25Y |  | 31 |
| A 329 | 3 | P7-35 | 19N | 17 | 16 | S7A- 4A | 25Y |  | 31 |
| A 330 | 3 | P7-36 | 19N | 17 | 16 | S7A- 3A | 25Y |  | 31 |
| A 331 | 3 | P7-37 | 19N | 17 | 16 | S7A- 2A | 25Y |  | 31 |
| A 332 | 1 |  |  | A 10 |  |  |  | A 10<br>7 8 |  |
| A 332B | 4 | E28 | 25N |  | 33 | SHLD A332 | 25N |  |  |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

|  |  |  |
|---|---|---|
| MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096 |
| SCALE-NONE | REV LTR J | SHEET 44 OF 51 |

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | 2 T/N | FROM ITEM NO. | NO. | TO CIRCUIT POINT | 2 T/N | TO ITEM NO. | NO |
|---|---|---|---|---|---|---|---|---|---|
| A 332L | | S1A- 1B | 25Y | | 38 | S2B- 1B | 25Y | | 30 |
| A 332R | | S1A- 1A | 25Y | | 38 | S2B- 1A | 25Y | | 30 |
| A 333 | 1 | | | A 10 | | | | A 10 | |
| | | | | | | | | 7 8 | |
| A 333A | 4 | E28 | 25N | | 33 | SHLD A333 | 25N | | |
| A 333L | | S1A- 3B | 25Y | | 38 | S2B- 3B | 25Y | | 30 |
| A 333R | | S1A- 3A | 25Y | | 38 | S2B- 3A | 25Y | | 30 |
| A 334 | 3 | S11B- 6A | 25Y | | 28 | S10SW2-C | 25Y | | 26 |
| A 335 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 335A | 4 | SHLD A335 | 25N | | | E28 | 25N | | 33 |
| A 335L | | S2B- 1B | 25Y | | 30 | S8A- 1B | 25Y | | 29 |
| A 335R | | S2B- 1A | 25Y | | 30 | S8A- 1A | 25Y | | 29 |
| A 336 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 336A | 4 | SHLD A336 | 25N | | | E28 | 25N | | 33 |
| A 336L | | S2B- 3B | 25Y | | 30 | S8A- 3B | 25Y | | 29 |
| A 336R | | S2B- 3A | 25Y | | 30 | S8A- 3A | 25Y | | 29 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A 1900096
SCALE-NONE REV LTR J SHEET 45 OF 51

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| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | 2 T/N | FROM ITEM NO. | NO. | TO CIRCUIT POINT | 2 T/N | TO ITEM NO. | NO |
|---|---|---|---|---|---|---|---|---|---|
| A 337 | 3 | S4SW1-C | 25Y | | 37 | S4SW2-C | 25Y | | 37 |
| A 338 | 3 | S4SW1-C | 25Y | | 37 | S13SW1-C | 25Y | | 27 |
| A 339 | 3 | S4SW1-NO | 25Y | | 37 | XDS2-A | 25Y | | 37 |
| A 340 | 3 | S4SW2-NO | 25Y | | 37 | S5SW1-C | 25Y | | 36 |
| A 341 | 3 | S5SW1-C | 25Y | | 36 | S5SW2-C | 25Y | | 36 |
| A 342 | 3 | S5SW2-NC | 25Y | | 36 | XDS3-A | 25Y | | 36 |
| A 343 | 3 | S6A- 1A | 25Y | | 32 | XDS1-10 | 25Y | | 35 |
| A 344 | 3 | S6A- 2A | 25Y | | 32 | XDS1- 1 | 25Y | | 35 |
| A 345 | 3 | S6A- 3A | 25Y | | 32 | XDS1- 2 | 25Y | | 35 |
| A 346 | 3 | S6A- 4A | 25Y | | 32 | XDS1- 3 | 25Y | | 35 |
| A 347 | 3 | S6A- 5A | 25Y | | 32 | XDS1- 4 | 25Y | | 35 |
| A 348 | 3 | S6A- 6A | 25Y | | 32 | XDS1- 5 | 25Y | | 35 |
| A 349 | 3 | S6A- 7A | 25Y | | 32 | XDS1- 6 | 25Y | | 35 |
| A 350 | 3 | S6A- 8A | 25Y | | 32 | XDS1- 7 | 25Y | | 35 |
| A 351 | 3 | S6A- 9A | 25Y | | 32 | XDS1- 8 | 25Y | | 35 |
| A 352 | 3 | S6A-10A | 25Y | | 32 | XDS1- 9 | 25Y | | 35 |
| A 353 | 3 | S7A- 1A | 25Y | | 31 | XDS1-20 | 25Y | | 35 |
| A 354 | 3 | S7A- 2A | 25Y | | 31 | XDS1-11 | 25Y | | 35 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A 1900096
SCALE-NONE REV LTR J SHEET 46 OF 51

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| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | 2 T/N | FROM ITEM NO. | NO. | TO CIRCUIT POINT | 2 T/N | TO ITEM NO. | NO |
|---|---|---|---|---|---|---|---|---|---|
| A 355 | 3 | S7A- 3A | 25Y | | 31 | XDS1-12 | 25Y | | 35 |
| A 356 | 3 | S7A- 4A | 25Y | | 31 | XDS1-13 | 25Y | | 35 |
| A 357 | 3 | S7A- 5A | 25Y | | 31 | XDS1-14 | 25Y | | 35 |
| A 358 | 3 | S7A- 6A | 25Y | | 31 | XDS1-15 | 25Y | | 35 |
| A 359 | 3 | S7A- 7A | 25Y | | 31 | XDS1-16 | 25Y | | 35 |
| A 360 | 3 | S7A- 8A | 25Y | | 31 | XDS1-17 | 25Y | | 35 |
| A 361 | 3 | S7A- 9A | 25Y | | 31 | XDS1-18 | 25Y | | 35 |
| A 362 | 3 | S7A-10A | 25Y | | 31 | XDS1-19 | 25Y | | 35 |
| A 363 | 3 | S9SW2-C | 25Y | | 25 | S4SW2-C | 25Y | | 37 |
| A 364 | 3 | S9SW2-C | 25Y | | 25 | S10SW1-C | 25Y | | 26 |
| A 365 | 3 | S9SW2-NO | 25Y | | 25 | S12SW1-C | 25Y | | 25 |
| A 366 | 3 | S9SW2-NO | 25Y | | 25 | XDS4-A | 25Y | | 25 |
| A 367 | 3 | S10SW1-C | 25Y | | 26 | S11- 6A | 25Y | | 28 |
| A 368 | 3 | S10SW1-NO | 25Y | | 26 | XDS5-A | 25Y | | 26 |
| A 369 | 3 | S10SW1-NC | 25Y | | 26 | XDS5-B | 25Y | | 26 |
| A 370 | 3 | S13SW1-C | 25Y | | 27 | XF1- 2 | 25Y | | 22 |
| A 371 | 3 | S13SW1-NO | 25Y | | 27 | XDS7-A | 25Y | | 27 |
| A 372 | 3 | S13SW2-C | 25Y | | 27 | S13SW3-C | 25Y | | 27 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A 1900096
SCALE-NONE REV LTR J SHEET 47 OF 51

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| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | 2 T/N | FROM ITEM NO. | NO. | TO CIRCUIT POINT | 2 T/N | TO ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 373 | 3 | S13SW3-C | 25Y | | 27 | XDS7-G | 25Y | | 27 |
| A 374 | 3 | XDS1-G | 25Y | 20 | 34 | XDS2-G | 25Y | | 37 |
| A 375 | 3 | XDS1-G | 25Y | | 34 | XDS5-G | 25Y | | 26 |
| A 376 | 3 | XDS2-A | 25Y | | 37 | XDS2-C | 25Y | | 37 |
| A 377 | 3 | XDS2-G | 25Y | | 37 | XDS3-G | 25Y | | 36 |
| A 378 | 3 | XDS3-A | 25Y | | 36 | XDS3-C | 25Y | | 36 |
| A 379 | 3 | XDS3-G | 25Y | | 36 | XDS4-G | 25Y | | 25 |
| A 380 | 3 | XDS4-A | 25Y | | 25 | XDS4-C | 25Y | | 25 |
| A 381 | 3 | XDS4-G | 25Y | | 25 | XDS6-G | 25Y | | 25 |
| A 382 | 3 | XDS5-A | 25Y | | 26 | XDS5-D | 25Y | | 26 |
| A 383 | 3 | XDS5-B | 25Y | | 26 | XDS5-C | 25Y | | 26 |
| A 384 | 3 | XDS5-G | 25Y | | 26 | XDS7-G | 25Y | | 27 |
| A 385 | 3 | XDS6-A | 25Y | | 25 | XDS6-C | 25Y | | 25 |
| A 386 | 3 | XDS6-G | 25Y | | 25 | P6-57 | 19N | 18 | 15 |
| A 387 | 3 | XDS7-A | 25Y | | 27 | XDS7-C | 25Y | | 27 |
| A 388 | 4 | E3 | 25N | | 12 | E2 | 25N | | 18 |
| A 389 | 4 | E4 | 25N | | 13 | E2 | 25N | | 18 |
| A 390 | 4 | E5 | 25N | | 14 | E2 | 25N | | 18 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A 1900096
SCALE-NONE REV LTR J SHEET 48 OF 51

GFL WIRING HARNESS A M 1900096

| CONDUCTOR INDIVIDUAL LENGTH | | | FROM | | | | | | TO | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | TERMINATION SPEC. 1> | | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | TERMINATION SPEC 1> | |
| NUMBER | ITEM NO. | 2> | CIRCUIT POINT | 2> | T/N | 2> | ITEM NO. | NO. | CIRCUIT POINT | 2> | T/N | 2> | ITEM NO. | NO. |
| A 412 | 4 | | E27 | 25 | N | | | 11 | E2 | 25 | N | | | 18 |
| A 413 | 4 | | E28 | 25 | N | | | 33 | E2 | 25 | N | | | 18 |
| A 418 | 4 | | P6-59 | 19 | N | | | 15 | E27 | 25 | N | | | 11 |
| A 419 | 3 | | S2A-2A | 25 | Y | | | 30 | S2A-4A | 25 | Y | | | 30 |
| A 420 | 29 | | | | | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 420B | 3 | | P5-18 | 19 | N | | 18 | 43 | SHLD A420 | 25 | N | | | |
| A 420E | | | J4-H1 | 13 | N | | 14 | 4 | P5-65 | 19 | N | | 18 | 43 |
| A 420X | | | J4-H2 | | | 28 | | 4 | SHLD A420 | | | | | |
| A 421 | 3 | | S11B-3A | 25 | Y | | | 28 | P2-63 | 19 | N | | 17 | 41 |
| A 422 | 3 | | S11B-5A | 25 | Y | | | 28 | S2A-5A | 25 | Y | | | 30 |
| A 423 | 3 | | P7-39 | 19 | N | | 17 | 16 | J11-52 | 19 | N | | 17 | 20 |
| A 424 | 3 | | P7-40 | 19 | N | | 17 | 16 | J11-54 | 19 | N | | 17 | 20 |
| A 425 | 3 | | P6-43 | 19 | N | | 17 | 15 | J11-55 | 19 | N | | 17 | 20 |
| A 426 | 3 | | P7-41 | 19 | N | | 17 | 16 | J11-56 | 19 | N | | 17 | 20 |
| A 427 | 3 | | P7-42 | 19 | N | | 17 | 16 | J11-57 | 19 | N | | 17 | 20 |
| A 428 | 3 | | P6-44 | 19 | N | | 17 | 15 | J11-58 | 19 | N | | 17 | 20 |
| A 429 | 3 | | S1A-2A | 25 | Y | | | 38 | S1A-2B | 25 | Y | | | 38 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

| | | |
|---|---|---|
| MANNED SPACECRAFT CENTER<br>HOUSTON, TEXAS | SIZE<br>A | 1900096 |
| SCALE - NONE | REV LTR M | SHEET 49 OF 51 |

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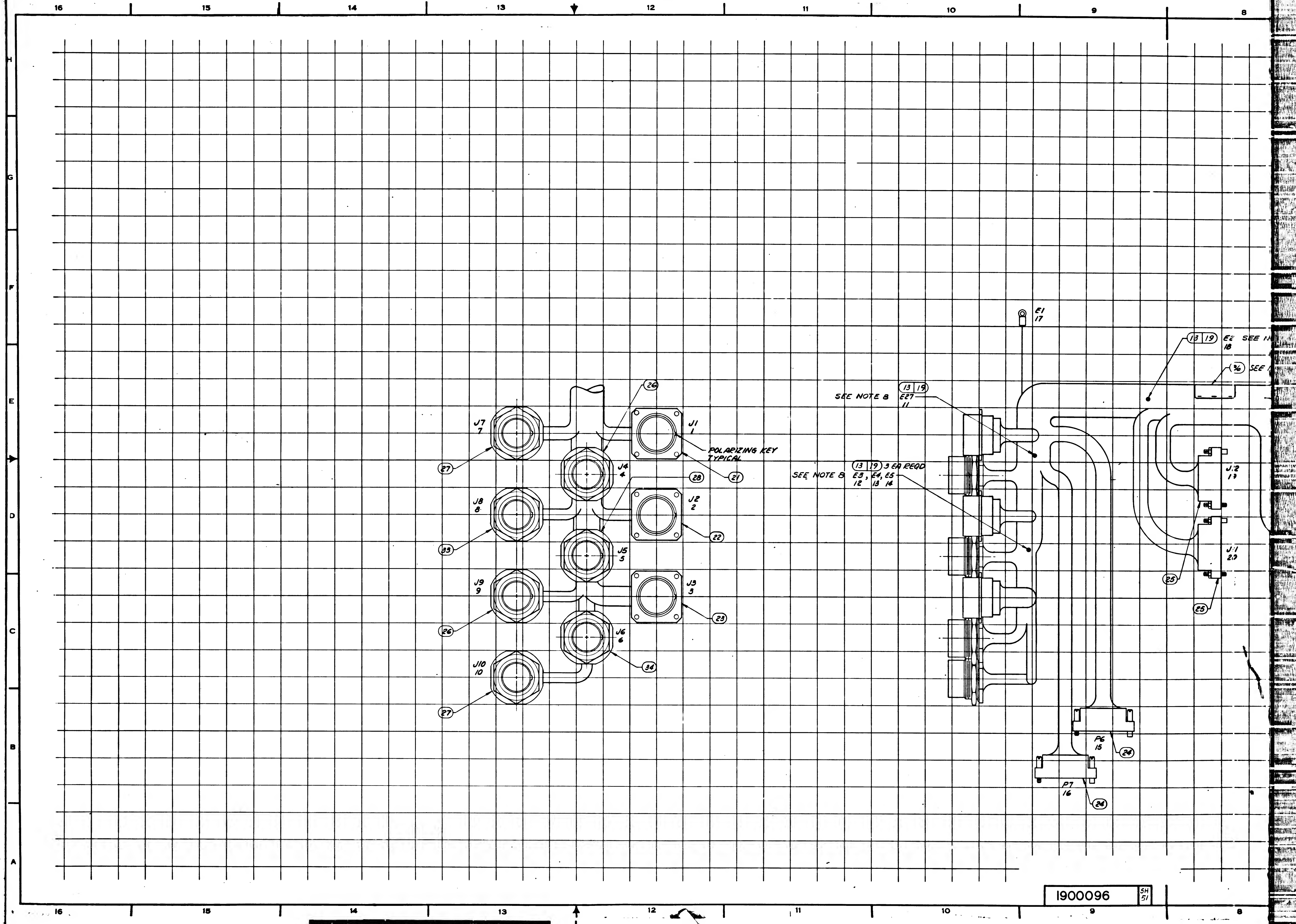
GFL WIRING HARNESS A M 1900096

| CONDUCTOR INDIVIDUAL LENGTH | | | FROM | | | | | | TO | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | TERMINATION SPEC. 1> | | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | TERMINATION SPEC 1> | |
| NUMBER | ITEM NO. | 2> | CIRCUIT POINT | 2> | T/N | 2> | ITEM NO. | NO. | CIRCUIT POINT | 2> | T/N | 2> | ITEM NO. | NO. |
| A 430 | 3 | | S2B-2A | 25 | Y | | | 30 | S2B-2B | 25 | Y | | | 30 |
| A 431 | 3 | | S8A-2A | 25 | Y | | | 29 | S8A-2B | 25 | Y | | | 29 |
| A 432 | 3 | | P3-30 | 19 | N | | 17 | 42 | S10SW3-NC | 25 | Y | | | 26 |
| A 433 | 3 | | P5-24 | 19 | N | | 17 | 43 | S10SW3-NO | 25 | Y | | | 26 |
| A 434 | 3 | | S10SW2-C | 19 | N | | | 2 | S10SW3-C | 25 | Y | | | 26 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

| | | |
|---|---|---|
| MANNED SPACECRAFT CENTER<br>HOUSTON, TEXAS | SIZE<br>A | 1900096 |
| SCALE - NONE | REV LTR M | SHEET 50 OF 51 |

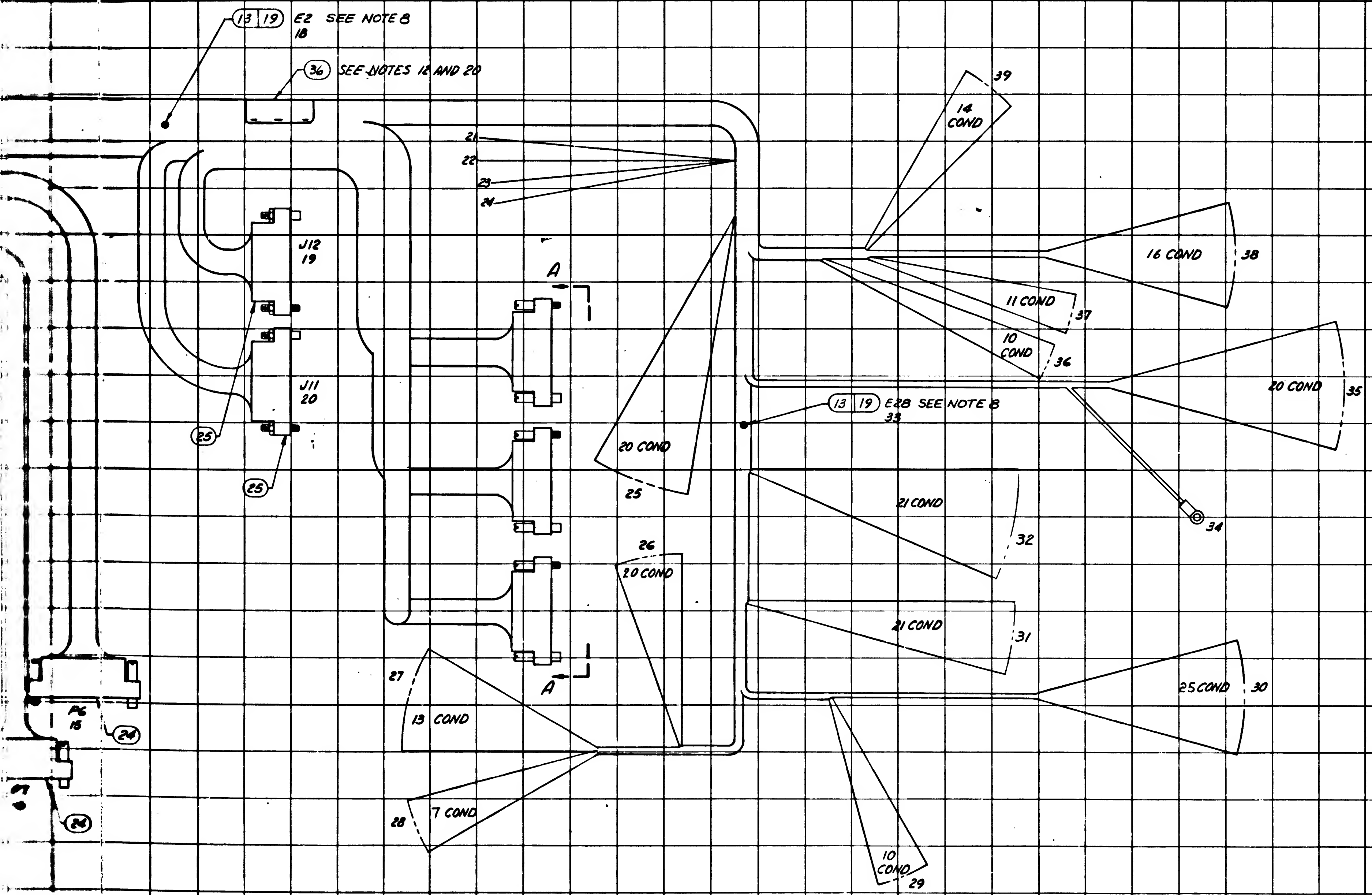


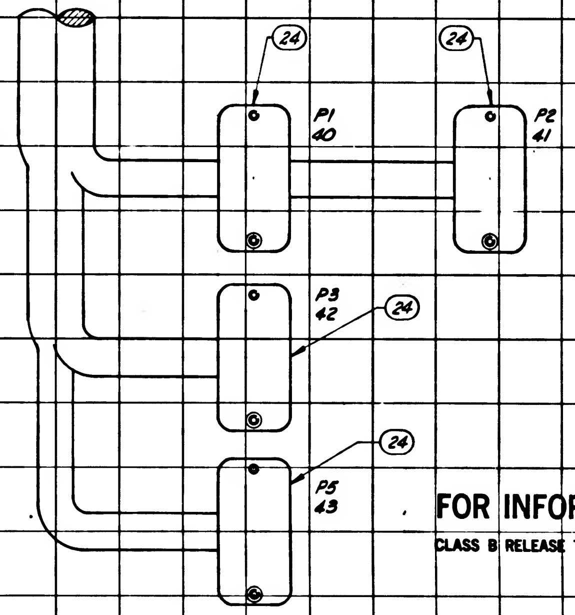
1900096 SH 51

171900096

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
| H | | THIS SHEET ADDED<br>PER TDRR 02869 | | 3 Dec 63 | |

FOR ADDITIONAL REVISION RECORD
SEE SHEET 1





PARTIAL VIEW AA

**FOR INFORMATION ONLY**
CLASS B RELEASE TDR No. 01801 DATE 2 July 63

| | |
|---|---|
| 1900057-011 | 1900057-011 |
| NEXT ASSY | USED ON |
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE WISCONSIN
ACSP PN
DRAWN Cochran DATE 8 OCT 63
CHECKED 10 OCT 63
APPROVAL Farley 15 OCT 63
APPROVAL 4/2/63
NASA APPROVAL W. J. 12-3-63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS A

CODE IDENT NO. SIZE J2 1900096
SCALE 1/1 SHEET 51 OF 51

1900096

1900096 SH 51

2/1900096

| APPLICATION | |
|---|---|
| NEXT ASSY | USED ON |
| 1900057-011 | 1900057-011 |

| REVISIONS | | | |
|---|---|---|---|
| SYM | DESCRIPTION | DATE | APPROVAL |
| H | REPLACES REV. G WITH CHANGE PER MXC 191409<br>REVISED PER TDR 04867 | 63 | TP |
| J | CHANGE IN ACCORDANCE WITH MXC 191496 01378 | 9 JAN 64 | WSM |
| K | CHANGE IN ACCORDANCE WITH MXC 192540 [illegible] | 5 FEB 64 | S.A |
| L | CHANGE IN ACCORDANCE WITH CM193527 [illegible] | 19 FEB 64 | S.A. |
| M | CHANGE IN ACCORDANCE WITH CM-193646 [illegible] | 24-FEB-64 | |
| N | CHANGE IN ACCORDANCE WITH CM-193808 08398 PER TDR | 16 MAR 64 | JM. |
| P | CHANGE IN ACCORDANCE WITH CM 197139<br>REVISED PER TDR [illegible] | 21 MAY 64 | |
| R | CHANGE IN ACCORDANCE WITH CM197969 12895 | 15 JUNE 64 | WK |

Ⓜ

# FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 01801 DATE 2 July 63

Ⓗ REPLACES REV(G) WITH CHANGE

| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| REV | | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R |
| SHEET | | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 |
| REV STATUS | REV | | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | |
| OF SHEETS | SHEET | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 25 | |

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

ACSP PN

DRAWN DATE 10 OCT 63
CHECKED 14 OCT 63
APPROVAL 15 OCT 63
APPROVAL 12/2/63
NASA APPROVAL 12-3
APPROVAL
CONTRACT NAS 9-497

WIRING HARNESS A

| CODE IDENT NO. | SIZE | | REV |
|---|---|---|---|
| | A | 1900096 | R |
| SCALE | | SHEET 1 OF 32 | |

## REVISION STATUS OF SHEETS

| SH | REV | SH | REV | SH | REV | SH | REV | SH | REV | SH | REV | SH | REV | SH | REV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 | R | | | | | | | | | | | | | | |
| 51 | R | | | | | | | | | | | | | | |
| 52 | R | | | | | | | | | | | | | | |

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

REVISION
R

NASA DRAWING NO.
1900096
SHEET 2 OF 52

GFL WIRING HARNESS A R 1900096

PENNANT NOTE GENERAL NOTES

1 SEE CONDUCTOR CHART, PENNANT NOTE 1.

2 SEE CONDUCTOR CHART, PENNANT NOTE 2.

3 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

4 MARK CONDUCTOR IDENTIFICATION PER ND1002019.

5 MARK CONDUCTOR IDENTIFICATION ON SINGLE CONDUCTORS PER ND1002019 OMITTING ALL SUFFIX LETTERS EXCEPT A AND B.

6 SPACING OF CONDUCTOR IDENTIFICATION SHALL BE EVERY 1.2 INCHES.

7 SPIRALLING OF THE MARKING IS ALLOWED.

8 MARK SLEEVING WITH REFERENCE DESIGNATION AS SHOWN .12 INCH HIGH, COLOR BLACK PER ND1002019.

9 MARK SLEEVING OF MULTI-CONDUCTORS WITH THE CONDUCTOR NUMBER .12 INCH HIGH. COLOR BLACK, PER ND1002019 WHEN SLEEVING ITEM NUMBERS FOLLOW AN A OR T IN THE ACCESSORIES ITEM NUMBER FIELD.

10 A OR T PREFIX IN THE ACCESSORIES ITEM NUMBER COLUMN INDICATES THE READING POSITION AWAY FROM TERMINATION OR TOWARD TERMINATION RESPECTIVELY, OF THE WIRE MARKER SLEEVE.

11 LACE HARNESS USING ITEM 35.

12 IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (ES-267).

13 SOLDER PER MIL-STD-440 USING ITEMS 31 AND 32.

14 Y OR N IN TINNED COLUMN INDICATES YES OR NO.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1900096
SCALE - NONE
REV LTR R
SHEET 3 OF 52

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GFL WIRING HARNESS A R 1900096

PENNANT NOTE GENERAL NOTES

15 A LETTER WITH AN ASTERISK SUFFIX INDICATES A LOWER CASE LETTER.

16 GRID MODULE IS 1 INCH.

17 UNLESS OTHERWISE SPECIFIED ---
FEATURE CENTERLINES ARE LOCATED WITHIN + OR - .25 INCH.
END OF HOOKUP WIRES OR ACCESSORIES ARE LOCATED WITHIN + OR - .12 INCH.

18 VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.

19 THE SUFFIX LETTER OF A CONDUCTOR IDENTIFICATION NUMBER INDICATES CONDUCTOR SHIELDING, COLOR, OR MARKING.
A - FROM END SHIELD
B - TO END SHIELD
E - GRAY
L - WHITE WITH BLUE TRACER
R - WHITE WITH RED TRACER
X - COAX OUTER CONDUCTOR

20 FASTEN MARKER SECURELY WITH ITEM 35. WRAP MARKER TO CONFORM TO CABLE CONFIGURATION

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1900096
SCALE - NONE
REV LTR R
SHEET 4 OF 52

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GFL WIRING HARNESS A R 1900096

PENNANT NOTE GENERAL NOTES

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

| APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD. | TOLERANCE | | | | |
|---|---|---|---|---|---|
| | WIRE OR CABLE | STRIP | | CUT | |
| | | WIRE | JACKET | WIRE | SHIELD |
| UNDER 1 INCH | + .06-.00 | +.03-.00 | +.06-.06 | +.06-.06 | +.06-.06 |
| 1 INCH TO 6 INCHES | + .50-.00 | +.06-.00 | +.25-.25 | +.25-.25 | +.25-.25 |
| 6 INCHES TO 6 FEET | +1.00-.00 | | +.50-.50 | +.50-.50 | +.50-.50 |
| OVER 6 FEET | +2.00-.00 | | | | |

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1900096
SCALE - NONE
REV LTR R
SHEET 5 OF 52

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GFL WIRING HARNESS A R 1900096

PENNANT LIST OF MATERIALS

| NOTE | ITEM | QTY | PART NO | DESCRIPTION |
|---|---|---|---|---|
| | 1 | 1 | 1900096-004 | WIRE ND1002181 CLASS 4 WHITE JACKET TYPE 2 24AWG (WHT/RED, WHT/BLU) 73 FT TOTAL LENGTH |
| | 2 | 1 | 1900096-003 | WIRE ND1002181 CLASS 4 WHITE JACKET TYPE 1 24AWG (WHITE) 36 INCHES TOTAL LENGTH |
| | 3 | 1 | 1900096-002 | WIRE ND1002181 CLASS 1 TYPE 1 24AWG (WHITE) 680 FT TOTAL LENGTH |
| | 4 | 1 | 1900096-001 | WIRE ND1002181 CLASS 1 TYPE 1 22AWG (WHITE) 228 FT TOTAL LENGTH |
| 18 | 5 | 60 | 1000243-002 | FERRULE, ELECTRICAL CONDUCTOR INNER |
| 18 | 6 | 60 | 1000242-004 | FERRULE, ELECTRICAL CONDUCTOR OUTER |
| 18 | 7 | 25 | 1000243-006 | FERRULE, ELECTRICAL CONDUCTOR INNER |
| 18 | 8 | 25 | 1000242-005 | FERRULE, ELECTRICAL CONDUCTOR OUTER |
| | 9 | | | DELETED |
| | 10 | 110 | 1010490-198 | INSULATION SLEEVING, ELECTRICAL (HEAT SHRINK) |
| | 11 | 1 | 1010490-200 | INSULATION SLEEVING, ELECTRICAL (HEAT SHRINK) |
| | 13 | 6 | 1016006-002 | SPLICE REDUCER, PERMANENT, CRIMP STYLE, COPPER |
| 18 | 14 | 59 | 1015908- 21 | COAXIAL, SOCKET CONTACT |
| 18 | 15 | 59 | 1015908- 41 | COAXIAL, OUTER MALE BODY |
| 18 | 16 | 59 | 1015908- 51 | COAXIAL, HYRING |
| 18 | 17 | 232 | 1015818-424 | CONNECTOR SOCKET CONTACTS |

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PENNANT LIST OF MATERIALS

| NOTE | ITEM | QTY | PART NO | DESCRIPTION |
|---|---|---|---|---|
| 18 | 18 | 204 | 1015818-420 | CONNECTOR SOCKET CONTACTS |
| | 19 | 6 | 1010490-258 | INSULATION SLEEVING, ELECTRICAL (HEAT SHRINK) |
| 18 | 20 | 2 | 1015902- 46 | TERMINAL LUG |
| | 21 | 1 | MS3127E-24-61P | CONNECTOR, RECEP ELEC |
| | 22 | 1 | MS3127E-24-61PW | CONNECTOR, RECEP ELEC |
| | 23 | 1 | MS3127E-24-61PX | CONNECTOR, RECEP ELEC |
| 18 | 24 | 6 | 1015818-660 | CONNECTOR, PLUG ELEC |
| 18 | 25 | 2 | 1015867-560 | CONNECTOR, RECEP ELEC |
| 18 | 26 | 2 | 1015906-100 | CONNECTOR, RECEP ELEC |
| 18 | 27 | 2 | 1015906-101 | CONNECTOR, RECEP ELEC |
| 18 | 28 | 1 | 1015906-102 | CONNECTOR, RECEP ELEC |
| | 29 | 1 | 1900096-005 | WIRE-COAX MIL-C-17/69A RG189A/U 173 FT TOTAL LG |
| | 30 | 59 | 1010490-202 | INSULATION SLEEVING, ELECTRICAL (HEAT SHRINK) |
| | 31 | AR | QQ-S-571 | SOLDER SN60 (ES-2175 ALLOY 1) |
| | 32 | AR | QQ-S-571 | FLUX TYPE AR (ES-2175 TYPE 1 OR 2) OR MIL-F-14256 FLUX (ES-2798) |
| 18 | 33 | 1 | 1015906-103 | CONNECTOR, RECEP. ELEC. |
| 18 | 34 | 1 | 1015906-104 | CONNECTOR, RECEP. ELEC. |

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GFL WIRING HARNESS A R 1900096

PENNANT LIST OF MATERIALS

| NOTE | ITEM | QTY | PART NO | DESCRIPTION |
|---|---|---|---|---|
| | 35 | 1 | MIL-T-713 | LACING TAPE TYPE P, CLASS 2, BLACK (ES-2732 NO. 18) |
| | 36 | 1 | 1016128-001 | BAND IDENTIFICATION, BLANK |
| 18 | 37 | 21 | 1015864-109 | INSULATION SLEEVING |

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR INDIVIDUAL LENGTH | | | FROM | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | | ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T/N | TERMINATION SPEC. ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T/N | TERMINATION SPEC ITEM NO. | NO. |
| A | 1 | 4 | J1-A | 19N | | 1 | E1 | 29 | 20 | 17 |
| A | 2 | 3 | J1-B | 19N | | 1 | P6-56 | 19N | 17 | 15 |
| A | 3 | 3 | J1-C | 19N | | 1 | P6-54 | 19N | 17 | 15 |
| A | 4 | 3 | J1-D | 19N | | 1 | P6-55 | 19N | 17 | 15 |
| A | 5 | 3 | J1-E | 19N | | 1 | S6A- 1A | 25Y | | 32 |
| A | 6 | 3 | J1-F | 19N | | 1 | P7- 1 | 19N | 18 | 16 |
| A | 7 | 3 | J1-G | 19N | | 1 | P7- 2 | 19N | 18 | 16 |
| A | 8 | 3 | J1-H | 19N | | 1 | P7- 3 | 19N | 18 | 16 |
| A | 9 | 3 | J1-J | 19N | | 1 | P7- 4 | 19N | 18 | 16 |
| A | 10 | 3 | J1-K | 19N | | 1 | P7- 5 | 19N | 18 | 16 |
| A | 11 | 3 | J1-L | 19N | | 1 | P7- 6 | 19N | 18 | 16 |
| A | 12 | 3 | J1-M | 19N | | 1 | P7- 7 | 19N | 18 | 16 |
| A | 13 | 3 | J1-N | 19N | | 1 | P7- 8 | 19N | 18 | 16 |
| A | 14 | 3 | J1-P | 19N | | 1 | P7- 9 | 19N | 18 | 16 |
| A | 15 | 3 | J1-R | 19N | | 1 | P7-11 | 19N | 17 | 16 |
| A | 16 | 3 | J1-S | 19N | | 1 | P7-12 | 19N | 17 | 16 |
| A | 17 | 3 | J1-T | 19N | | 1 | P7-13 | 19N | 17 | 16 |
| A | 18 | 3 | J1-U | 19N | | 1 | P7-14 | 19N | 17 | 16 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR INDIVIDUAL LENGTH | | | FROM | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | | ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T/N | TERMINATION SPEC. ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T/N | TERMINATION SPEC ITEM NO. | NO. |
| A | 19 | 3 | J1-V | 19N | | 1 | P7-15 | 19N | 17 | 16 |
| A | 20 | 3 | J1-W | 19N | | 1 | P7-16 | 19N | 17 | 16 |
| A | 21 | 3 | J1-X | 19N | | 1 | P7-17 | 19N | 17 | 16 |
| A | 22 | 3 | J1-Y | 19N | | 1 | P7-18 | 19N | 17 | 16 |
| A | 23 | 3 | J1-Z | 19N | | 1 | P7-19 | 19N | 17 | 16 |
| A | 24 | 3 | J1-A* | 19N | | 1 | P7-20 | 19N | 17 | 16 |
| A | 25 | 3 | J1-B* | 19N | | 1 | P7-21 | 19N | 17 | 16 |
| A | 26 | 3 | J1-C* | 19N | | 1 | P7-22 | 19N | 17 | 16 |
| A | 27 | 3 | J1-D* | 19N | | 1 | P7-23 | 19N | 17 | 16 |
| A | 28 | 3 | J1-F* | 19N | | 1 | P7-24 | 19N | 17 | 16 |
| A | 29 | 3 | J1-F* | 19N | | 1 | P7-25 | 19N | 17 | 16 |
| A | 30 | 3 | J1-G* | 19N | | 1 | P7-26 | 19N | 17 | 16 |
| A | 31 | 3 | J1-H* | 19N | | 1 | P7-27 | 19N | 17 | 16 |
| A | 32 | 3 | J1-I* | 19N | | 1 | P7-28 | 19N | 17 | 16 |
| A | 33 | 3 | J1-J* | 19N | | 1 | P7-29 | 19N | 18 | 16 |
| A | 34 | 3 | J1-K* | 19N | | 1 | P7-30 | 19N | 18 | 16 |
| A | 35 | 3 | J1-M* | 19N | | 1 | P7-31 | 19N | 18 | 16 |
| A | 36 | 3 | J1-N* | 19N | | 1 | P7-32 | 19N | 18 | 16 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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SIZE A 1900096
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GFL WIRING HARNESS A R 1900096

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T/N | FROM TERMINATION SPEC ITEM NO | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T/N | TO TERMINATION SPEC ITEM NO | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 37 | 3 | J1-P* | 19N | | 1 | P7-33 | 19N | 18 | 16 |
| A 38 | 3 | J1-Q* | 19N | | 1 | P7-34 | 19N | 18 | 16 |
| A 39 | 3 | J1-R* | 19N | | 1 | P7-35 | 19N | 18 | 16 |
| A 40 | 3 | J1-S* | 19N | | 1 | P7-36 | 19N | 18 | 16 |
| A 41 | 3 | J1-T* | 19N | | 1 | P7-37 | 19N | 18 | 16 |
| A 42 | 3 | J1-U* | 19N | | 1 | S7A- 1A | 25Y | | 31 |
| A 43 | 3 | J1-V* | 19N | | 1 | P6-51 | 19N | 17 | 15 |
| A 44 | 3 | J1-W* | 19N | | 1 | S11A- 1A | 25Y | | 28 |
| A 45 | 3 | J1-X* | 19N | | 1 | S11A- 3A | 25M | | 28 |
| A 46 | 3 | J1-Y* | 19N | | 1 | S11A- 5A | 25M | | 28 |
| A 47 | 3 | J1-BB | 19N | | 1 | P6-48 | 19N | 17 | 15 |
| A 48 | 3 | J1-A* | 19N | | 1 | P6-49 | 19N | 17 | 15 |
| A 49 | 3 | J1-Z* | 19N | | 1 | P6-50 | 19N | 17 | 15 |
| A 50 | 2 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 50A | 4 | SHLD A50 | 25N | | | E27 | 25N | | 11 |
| A 50L | | J1-CC | 19N | | 1 | P6-16 | 19N | 17 | 15 |
| A 50R | | J1-DD | 19N | | 1 | P6-21 | 19N | 17 | 15 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T/N | FROM TERMINATION SPEC ITEM NO | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T/N | TO TERMINATION SPEC ITEM NO | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 51 | 3 | J2-B | 19N | | 2 | P2-61 | 19N | 18 | 41 |
| A 52 | 3 | J2-C | 19N | | 2 | P2-62 | 19N | 18 | 41 |
| A 53 | 3 | J2-D | 19N | | 2 | P2-52 | 19N | 18 | 41 |
| A 54 | 3 | J2-E | 19N | | 2 | P2-53 | 19N | 18 | 41 |
| A 55 | 3 | J2-F | 19N | | 2 | P2-54 | 19N | 18 | 41 |
| A 56 | 3 | J2-G | 19N | | 2 | P2-55 | 19N | 18 | 41 |
| A 57 | 3 | J2-H | 19N | | 2 | P2-56 | 19N | 18 | 41 |
| A 58 | 3 | J2-J | 19N | | 2 | P2-57 | 19N | 18 | 41 |
| A 59 | 3 | J2-K | 19N | | 2 | P2-58 | 19N | 18 | 41 |
| A 60 | 3 | J2-L | 19N | | 2 | P2-59 | 19N | 18 | 41 |
| A 61 | 3 | J2-M | 19N | | 2 | P2-60 | 19N | 18 | 41 |
| A 62 | 3 | J2-N | 19N | | 2 | J12-15 | 19N | 17 | 19 |
| A 63 | 3 | J2-P | 19N | | 2 | J12-10 | 19N | 18 | 19 |
| A 64 | 3 | J2-R | 19N | | 2 | P6-46 | 19N | 18 | 15 |
| A 65 | 3 | J2-S | 19N | | 2 | KF1- 1 | 25Y | | 21 |
| A 66 | 3 | J2-T | 19N | | 2 | P6-57 | 19N | 17 | 15 |
| A 67 | 3 | J2-U | 19N | | 2 | J12-29 | 19N | 18 | 19 |
| A 68 | 3 | J2-V | 19N | | 2 | J12-28 | 19N | 18 | 19 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T/N | FROM TERMINATION SPEC ITEM NO | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T/N | TO TERMINATION SPEC ITEM NO | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 69 | 3 | J2-W | 19N | | 2 | J12-27 | 19N | 18 | 19 |
| A 70 | 3 | J2-X | 19N | | 2 | J12-26 | 19N | 18 | 19 |
| A 71 | 3 | J2-Y | 19N | | 2 | J12-16 | 19N | 18 | 19 |
| A 72 | 3 | J2-Z | 19N | | 2 | J12-17 | 19N | 18 | 19 |
| A 73 | 3 | J2-A* | 19N | | 2 | J12-18 | 19N | 18 | 19 |
| A 74 | 3 | J2-B* | 19N | | 2 | J12-19 | 19N | 18 | 19 |
| A 75 | 3 | J2-C* | 19N | | 2 | J12-20 | 19N | 18 | 19 |
| A 76 | 3 | J2-D* | 19N | | 2 | J12-21 | 19N | 18 | 19 |
| A 77 | 3 | J2-E* | 19N | | 2 | J12-22 | 19N | 18 | 19 |
| A 78 | 3 | J2-F* | 19N | | 2 | J12-23 | 19N | 18 | 19 |
| A 79 | 3 | J2-G* | 19N | | 2 | J12-24 | 19N | 18 | 19 |
| A 80 | 3 | J2-H* | 19N | | 2 | J12-30 | 19N | 18 | 19 |
| A 81 | 3 | J2-I* | 19N | | 2 | J12-25 | 19N | 17 | 19 |
| A 82 | 3 | J2-M* | 19N | | 2 | P6-32 | 19N | 17 | 15 |
| A 83 | 3 | J2-N* | 19N | | 2 | P6-33 | 19N | 17 | 15 |
| A 84 | 3 | J2-P* | 19N | | 2 | P6-34 | 19N | 17 | 15 |
| A 85 | 3 | J2-Q* | 19N | | 2 | P6-35 | 19N | 17 | 15 |
| A 86 | 3 | J2-R* | 19N | | 2 | P6-36 | 19N | 17 | 15 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T/N | FROM TERMINATION SPEC ITEM NO | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T/N | TO TERMINATION SPEC ITEM NO | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 87 | 3 | J2-S* | 19N | | 2 | P6-37 | 19N | 17 | 15 |
| A 88 | 3 | J2-T* | 19N | | 2 | P6-38 | 19N | 17 | 15 |
| A 89 | 3 | J2-U* | 19N | | 2 | P6-39 | 19N | 17 | 15 |
| A 90 | 3 | J2-V* | 19N | | 2 | P6-40 | 19N | 17 | 15 |
| A 91 | 3 | J2-W* | 19N | | 2 | P6-41 | 19N | 17 | 15 |
| A 92 | 3 | J2-X* | 19N | | 2 | P6-42 | 19N | 17 | 15 |
| A 93 | 3 | J2-Y* | 19N | | 2 | J11-53 | 19N | 17 | 15 |
| A 94 | 3 | J2-Z* | 19N | | 2 | J11-59 | 19N | 17 | 15 |
| A 95 | 3 | J2-AA | 19N | | 2 | P6-45 | 19N | 17 | 15 |
| A 96 | 3 | J2-BB | 19N | | 2 | P6-29 | 19N | 17 | 15 |
| A 97 | 3 | J2-CC | 19N | | 2 | S13SW4-C | 25Y | | 27 |
| A 98 | 3 | J2-EE | 19N | | 2 | P6-31 | 19N | 17 | 15 |
| A 99 | 3 | J2-FF | 19N | | 2 | P6-30 | 19N | 17 | 15 |
| A 100 | 3 | J2-GG | 19N | | 2 | S13SW2-NC | 25Y | | 27 |
| A 101 | 3 | J2-GG | 19N | | 2 | J2-HH | 19N | | 2 |
| A 102 | 4 | J3-A | 19N | | 3 | E2 | 25N | | 18 |
| A 103 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | | TERMINATION SPEC. ITEM NO. | NO. | TO: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | | TERMINATION SPEC. ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 103A | 4 | SHLD A103 | 25N | | | E3 | 25N | | 12 |
| A 103L | | J3-B* | 19N | | 3 | S3A-10B | 25Y | | 39 |
| A 103R | | J3-B | 19N | | 3 | S3A-10A | 25Y | | 39 |
| A 104 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 104A | 4 | SHLD A104 | 25N | | | E3 | 25N | | 12 |
| A 104L | | J3-C* | 19N | | 3 | S3A- 6B | 25Y | | 39 |
| A 104R | | J3-C | 19N | | 3 | S3A- 6A | 25Y | | 39 |
| A 105 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 105A | 4 | SHLD A105 | 25N | | | E3 | 25N | | 12 |
| A 105L | | J3-D* | 19N | | 3 | S3A- 5B | 25Y | | 39 |
| A 105R | | J3-D | 19N | | 3 | S3A- 5A | 25Y | | 39 |
| A 106 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 106A | 4 | SHLD A106 | 25N | | | E3 | 25N | | 12 |
| A 106L | | J3-E* | 19N | | 3 | S3A- 4B | 25Y | | 39 |
| A 106R | | J3-E | 19N | | 3 | S3A- 4A | 25Y | | 39 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE - NONE | REV LTR R | SHEET 15 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | | TERMINATION SPEC. ITEM NO. | NO. | TO: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | | TERMINATION SPEC. ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 107 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 107A | 4 | SHLD A107 | 25N | | | E3 | 25N | | 12 |
| A 107L | | J3-F* | 19N | | 3 | S3A- 3B | 25Y | | 39 |
| A 107R | | J3-F | 19N | | 3 | S3A- 3A | 25Y | | 39 |
| A 108 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 108A | 4 | SHLD A108 | 25N | | | E3 | 25N | | 12 |
| A 108L | | J3-G* | 19N | | 3 | S3A- 2B | 25Y | | 39 |
| A 108R | | J3-G | 19N | | 3 | S3A- 2A | 25Y | | 39 |
| A 109 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 109A | 4 | SHLD A109 | 25N | | | E4 | 25N | | 13 |
| A 109L | | J3-H* | 19N | | 3 | P6-14 | 19N | 17 | 15 |
| A 109R | | J3-H | 19N | | 3 | P6-13 | 19N | 17 | 15 |
| A 110 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 110A | 4 | SHLD A110 | 25N | | | E4 | 25N | | 13 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | | TERMINATION SPEC. ITEM NO. | NO. | TO: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | | TERMINATION SPEC. ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 110L | | J3-J* | 19N | | 3 | S1A- 6B | 25Y | | 38 |
| A 110R | | J3-J | 19N | | 3 | S1A- 6A | 25Y | | 38 |
| A 111 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 111A | 4 | SHLD A111 | 25N | | | E4 | 25N | | 13 |
| A 111L | | J3-K* | 19N | | 3 | S2B- 5B | 25Y | | 30 |
| A 111R | | J3-K | 19N | | 3 | S2B- 5A | 25Y | | 30 |
| A 112 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 112A | 4 | SHLD A112 | 25N | | | E4 | 25N | | 13 |
| A 112L | | J3-M* | 19N | | 3 | S8A- 5B | 25Y | | 29 |
| A 112R | | J3-M | 19N | | 3 | S8A- 5A | 25Y | | 29 |
| A 113 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 113A | 4 | SHLD A113 | 25N | | | E4 | 25N | | 13 |
| A 113L | | J3-N* | 19N | | 3 | S1A- 1B | 25Y | | 38 |
| A 113R | | J3-N | 19N | | 3 | S1A- 1A | 25Y | | 38 |
| A 114 | 1 | | | A 10 | | | | A 10 | |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | | TERMINATION SPEC. ITEM NO. | NO. | TO: CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | | TERMINATION SPEC. ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 7 8 | | | | | |
| A 114A | 4 | SHLD A114 | 25N | | | E5 | 25N | | 14 |
| A 114L | | J3-P* | 19N | | 3 | S1A- 3B | 25Y | | 38 |
| A 114R | | J3-P | 19N | | 3 | S1A- 3A | 25Y | | 38 |
| A 115 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 115A | 4 | SHLD A115 | 25N | | | E5 | 25N | | 14 |
| A 115L | | J3-R* | 19N | | 3 | S8A- 4B | 25Y | | 29 |
| A 115R | | J3-R | 19N | | 3 | S8A- 4A | 25Y | | 29 |
| A 116 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 116A | 4 | SHLD A116 | 25N | | | E5 | 25N | | 14 |
| A 116L | | J3-S* | 19N | | 3 | S2B- 4B | 25Y | | 30 |
| A 116R | | J3-S | 19N | | 3 | S2B- 4A | 25Y | | 30 |
| A 117 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 117A | 4 | SHLD A117 | 25N | | | E5 | 25N | | 14 |
| A 117L | | J3-T* | 19N | | 3 | S1A- 4B | 25Y | | 38 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE - NONE | REV LTR R | SHEET 18 OF 52

GFL WIRING HARNESS A R 1900096

| CONDUCTOR | | FROM | | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | INDIVIDUAL LENGTH ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T N | TERMINATION SPEC 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TERMINATION SPEC 1 ITEM NO. | NO |
| A 117R | | J3-T | 19N | | | 3 | S1A- 4A | 25Y | | 38 |
| A 118 | 1 | | | | A 10 | | | | A 10 | |
| | | | | | 7 8 | | | | | |
| A 118A | 4 | SHLD A118 | 25N | | | | E5 | 25N | | 14 |
| A 118L | | J3-U* | 19N | | | 3 | S1A- 5B | 25Y | | 38 |
| A 118R | | J3-U | 19N | | | 3 | S1A- 5A | 25Y | | 38 |
| A 119 | 3 | J3-AA | 19N | | | 3 | S2A- 1A | 25Y | | 30 |
| A 120 | 3 | J3-BB | 19N | | | 3 | S2A- 3A | 25Y | | 30 |
| A 121 | 3 | J3-CC | 19N | | | 3 | S2A- 2A | 25Y | | 30 |
| A 122 | 3 | J3-DD | 19N | | | 3 | S2A- 1B | 25Y | | 30 |
| A 123 | 3 | J3-EE | 19N | | | 3 | S2A- 3B | 25Y | | 30 |
| A 124 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 124B | 3 | P5-66 | 19N | | 18 | 43 | SHLD A124 | 25N | | |
| A 124E | | J4-A1 | 13N | | 14 | 4 | P5-15 | 19N | 18 | 43 |
| A 124X | | J4-A2 | | 28 | | 4 | SHLD A124 | | | |
| A 125 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE - NONE | REV LTR R | SHEET 19 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR | | FROM | | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | INDIVIDUAL LENGTH ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T N | TERMINATION SPEC 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TERMINATION SPEC 1 ITEM NO. | NO |
| A 125B | 3 | P5-64 | 19N | | 18 | 43 | SHLD A125 | 25N | | |
| A 125E | | J4-B1 | 13N | | 14 | 4 | P5-13 | 19N | 18 | 43 |
| A 125X | | J4-B2 | | 28 | | 4 | SHLD A125 | | | |
| A 126 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 126B | 3 | P5-62 | 19N | | 18 | 43 | SHLD A126 | 25N | | |
| A 126E | | J4-C1 | 13N | | 14 | 4 | P5- 9 | 19N | 18 | 43 |
| A 126X | | J4-C2 | | 28 | | 4 | SHLD A126 | | | |
| A 127 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 127B | 3 | P5-58 | 19N | | 18 | 43 | SHLD A127 | 25N | | |
| A 127E | | J4-D1 | 13N | | 14 | 4 | P5- 7 | 19N | 18 | 43 |
| A 127X | | J4-D2 | | 28 | | 4 | SHLD A127 | | | |
| A 128 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 128B | 3 | P5-60 | 19N | | 18 | 43 | SHLD A128 | 25N | | |
| A 128E | | J4-E1 | 13N | | 14 | 4 | P5- 5 | 19N | 18 | 43 |
| A 128X | | J4-E2 | | 28 | | 4 | SHLD A128 | | | |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR | | FROM | | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | INDIVIDUAL LENGTH ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T N | TERMINATION SPEC 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TERMINATION SPEC 1 ITEM NO | NO |
| A 129 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 129B | 3 | P5-50 | 19N | | 18 | 43 | SHLD A129 | 25N | | |
| A 129E | | J4-F1 | 13N | | 14 | 4 | P5- 3 | 19N | 18 | 43 |
| A 129X | | J4-F2 | | 28 | | 4 | SHLD A129 | | | |
| A 130 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 130B | 3 | P5-52 | 19N | | 18 | 43 | SHLD A130 | 25N | | |
| A 130E | | J4-G1 | 13N | | 14 | 4 | P5- 1 | 19N | 19 | 43 |
| A 130X | | J4-G2 | | 28 | | 4 | SHLD A130 | | | |
| A 131 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 131B | 3 | P5-22 | 19N | | 18 | 43 | SHLD A131 | 25N | | |
| A 131E | | J4-K1 | 13N | | 14 | 4 | KF2- 1 | 25Y | | 23 |
| A 131X | | J4-K2 | | 28 | | 4 | SHLD A131 | | | |
| A 132 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 132B | 3 | P5-14 | 19N | | 18 | 43 | SHLD A132 | 25N | | |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE - NONE | REV LTR R | SHEET 21 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR | | FROM | | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | INDIVIDUAL LENGTH ITEM NO | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T N | TERMINATION SPEC. 1 ITEM NO | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 132E | | J4-J1 | 13N | | 14 | 4 | P5-63 | 19N | 18 | 43 |
| A 132X | | J4-J2 | | 28 | | 4 | SHLD A132 | | | |
| A 133 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 133B | 3 | P1-62 | 19N | | 18 | 40 | SHLD A133 | 25N | | |
| A 133E | | J5-A1 | 13N | | 14 | 5 | P1-25 | 19N | 18 | 40 |
| A 133X | | J5-A2 | | 28 | | 5 | SHLD A133 | | | |
| A 134 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 134B | 3 | P1-64 | 19N | | 18 | 40 | SHLD A134 | 25N | | |
| A 134E | | J5-B1 | 13N | | 14 | 5 | P1-23 | 19N | 18 | 40 |
| A 134X | | J5-B2 | | 28 | | 5 | SHLD A134 | | | |
| A 135 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 135B | 3 | P1-66 | 19N | | 18 | 40 | SHLD A135 | 25N | | |
| A 135E | | J5-C1 | 13N | | 14 | 5 | P1-21 | 19N | 18 | 40 |
| A 135X | | J5-C2 | | 28 | | 5 | SHLD A135 | | | |
| A 136 | 29 | | 56N | | A 30 | | | | A 10 | |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE - NONE | REV LTR R | SHEET 22 OF 52

GFL WIRING HARNESS A R 1900096

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | 2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 15 16 | | | | 5 6 | |
| A 136B | 3 | | P1-56 | 19N | | 18 | 40 | SHLD A136 | 25N | | |
| A 136E | | | J5-D1 | 13N | | 14 | 5 | P1-19 | 19N | 18 | 40 |
| A 136X | | | J5-D2 | | 28 | | 5 | SHLD A136 | | | |
| A 137 | 29 | | | 56N | | A 30 | | | | A 10 | |
| | | | | | | 15 16 | | | | 5 6 | |
| A 137B | 3 | | P1-58 | 19N | | 18 | 40 | SHLD A137 | 25N | | |
| A 137E | | | J5-E1 | 13N | | 14 | 5 | P1-17 | 19N | 18 | 40 |
| A 137X | | | J5-E2 | | 28 | | 5 | SHLD A137 | | | |
| A 138 | 29 | | | 56N | | A 30 | | | | A 10 | |
| | | | | | | 15 16 | | | | 5 6 | |
| A 138B | 3 | | P1-60 | 19N | | 18 | 40 | SHLD A138 | 25N | | |
| A 138E | | | J5-F1 | 13N | | 14 | 5 | P1-13 | 19N | 18 | 40 |
| A 138X | | | J5-F2 | | 28 | | 5 | SHLD A138 | | | |
| A 139 | 29 | | | 56N | | A 30 | | | | A 10 | |
| | | | | | | 15 16 | | | | 5 6 | |
| A 139B | 3 | | P1-52 | 19N | | 18 | 40 | SHLD A139 | 25N | | |
| A 139E | | | J5-G1 | 13N | | 14 | 5 | P1-11 | 19N | 18 | 40 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE - NONE | REV LTR R | SHEET 23 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | 2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A 139X | | | J5-G2 | | 28 | | 5 | SHLD A139 | | | |
| A 140 | 29 | | | 56N | | A 30 | | | | A 10 | |
| | | | | | | 15 16 | | | | 5 6 | |
| A 140B | 3 | | P1-53 | 19N | | 18 | 40 | SHLD A140 | 25N | | |
| A 140E | | | J5-H1 | 13N | | 14 | 5 | P1- 9 | 19N | 18 | 40 |
| A 140X | | | J5-H2 | | 28 | | 5 | SHLD A140 | | | |
| A 141 | 29 | | | 56N | | A 30 | | | | A 10 | |
| | | | | | | 15 16 | | | | 5 6 | |
| A 141B | 3 | | P1-54 | 19N | | 18 | 40 | SHLD A141 | 25N | | |
| A 141E | | | J5-J1 | 13N | | 14 | 5 | P1- 7 | 19N | 18 | 40 |
| A 141X | | | J5-J2 | | 28 | | 5 | SHLD A141 | | | |
| A 142 | 29 | | | 56N | | A 30 | | | | A 10 | |
| | | | | | | 15 16 | | | | 5 6 | |
| A 142B | 3 | | P1-43 | 19N | | 18 | 40 | SHLD A142 | 25N | | |
| A 142E | | | J6-A1 | 13N | | 14 | 6 | P1- 5 | 19N | 18 | 40 |
| A 142X | | | J6-A2 | | 28 | | 6 | SHLD A142 | | | |
| A 143 | 29 | | | 56N | | A 30 | | | | A 10 | |
| | | | | | | 15 16 | | | | 5 6 | |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE - NONE | REV LTR R | SHEET 24 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | 2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A 143B | 3 | | P1-44 | 19N | | 18 | 40 | SHLD A143 | 25N | | |
| A 143E | | | J6-B1 | 13N | | 14 | 6 | P1- 3 | 19N | 18 | 40 |
| A 143X | | | J6-B2 | | 28 | | 6 | SHLD A143 | | | |
| A 144 | 29 | | | 56N | | A 30 | | | | A 10 | |
| | | | | | | 15 16 | | | | 5 6 | |
| A 144B | 3 | | P1-24 | 19N | | 18 | 40 | SHLD A144 | 25N | | |
| A 144E | | | J6-C1 | 13N | | 14 | 6 | P1- 1 | 19N | 18 | 40 |
| A 144X | | | J6-C2 | | 28 | | 6 | SHLD A144 | | | |
| A 145 | 29 | | | 56N | | A 30 | | | | A 10 | |
| | | | | | | 15 16 | | | | 5 6 | |
| A 145B | 3 | | P1-22 | 19N | | 18 | 40 | SHLD A145 | 25N | | |
| A 145E | | | J6-D1 | 13N | | 14 | 6 | P1-61 | 19N | 18 | 40 |
| A 145X | | | J6-D2 | | 28 | | 6 | SHLD A145 | | | |
| A 146 | 29 | | | 56N | | A 30 | | | | A 10 | |
| | | | | | | 15 16 | | | | 5 6 | |
| A 146B | 3 | | P1-20 | 19N | | 18 | 40 | SHLD A146 | 25N | | |
| A 146E | | | J6-E1 | 13N | | 14 | 6 | P1-63 | 19N | 18 | 40 |
| A 146X | | | J6-E2 | | 28 | | 6 | SHLD A146 | | | |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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SCALE - NONE | REV LTR R | SHEET 25 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | 2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A 147 | 29 | | | 56N | | A 30 | | | | A 10 | |
| | | | | | | 15 16 | | | | 5 6 | |
| A 147B | 3 | | P1-18 | 19N | | 18 | 40 | SHLD A147 | 25N | | |
| A 147E | | | J6-F1 | 13N | | 14 | 6 | P1-65 | 19N | 18 | 40 |
| A 147X | | | J6-F2 | | 28 | | 6 | SHLD A147 | | | |
| A 148 | 29 | | | 56N | | A 30 | | | | A 10 | |
| | | | | | | 15 16 | | | | 5 6 | |
| A 148B | 3 | | P1-16 | 19N | | 18 | 40 | SHLD A148 | 25N | | |
| A 148E | | | J6-G1 | 13N | | 14 | 6 | P1-55 | 19N | 18 | 40 |
| A 148X | | | J6-G2 | | 28 | | 6 | SHLD A148 | | | |
| A 149 | 29 | | | 56N | | A 30 | | | | A 10 | |
| | | | | | | 15 16 | | | | 5 6 | |
| A 149B | 3 | | P1-14 | 19N | | 18 | 40 | SHLD A149 | 25N | | |
| A 149E | | | J6-H1 | 13N | | 14 | 6 | P1-57 | 19N | 18 | 40 |
| A 149X | | | J6-H2 | | 28 | | 6 | SHLD A149 | | | |
| A 150 | 29 | | | 56N | | A 30 | | | | A 10 | |
| | | | | | | 15 16 | | | | 5 6 | |
| A 150B | 3 | | P6- 3 | 19N | | 18 | 15 | SHLD A150 | 25N | | |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T N | TERMINATION SPEC ITEM NO | | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T N | TERMINATION SPEC ITEM NO. | | NO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 150E | | J7-A1 | 13N | | 14 | | 7 | P6- 4 | 19N | | 18 | | 15 |
| A 150X | | J7-A2 | | 28 | | | 7 | SHLD A150 | | | | | |
| A 151 | 29 | | 56N | | A | 30 | | | | | A | 10 | |
| | | | | | 15 | 16 | | | | | 5 | 6 | |
| A 151B | 3 | P2-36 | 19N | | 17 | | 41 | SHLD A151 | 25N | | | | |
| A 151E | | J7-B1 | 13N | | 14 | | 7 | P2-51 | 19N | | 18 | | 41 |
| A 151X | | J7-B2 | | 28 | | | 7 | SHLD A151 | | | | | |
| A 152 | 29 | | 56 | | A | 30 | | | | | A | 10 | |
| | | | | | 15 | 16 | | | | | 5 | 6 | |
| A 152B | 3 | P2-26 | 19N | | 17 | | 41 | SHLD A152 | 25N | | | | |
| A 152E | | J7-C1 | 13N | | 14 | | 7 | P2-49 | 19N | | 18 | | 41 |
| A 152X | | J7-C2 | | 28 | | | 7 | SHLD A152 | | | | | |
| A 153 | 29 | | 56N | | A | 30 | | | | | A | 10 | |
| | | | | | 15 | 16 | | | | | 5 | 6 | |
| A 153B | 3 | P2-28 | 19N | | 17 | | 41 | SHLD A153 | 25N | | | | |
| A 153E | | J7-D1 | 13N | | 14 | | 7 | P2-48 | 19N | | 18 | | 41 |
| A 153X | | J7-D2 | | 28 | | | 7 | SHLD A153 | | | | | |
| A 154 | 29 | | 56N | | A | 30 | | | | | A | 10 | |

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T N | TERMINATION SPEC ITEM NO | | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T N | TERMINATION SPEC ITEM NO. | | NO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 15 | 16 | | | | | 5 | 6 | |
| A 154B | 3 | P2-30 | 19N | | 17 | | 41 | SHLD A154 | 25N | | | | |
| A 154E | | J7-E1 | 13N | | 14 | | 7 | P2-44 | 19N | | 18 | | 41 |
| A 154X | | J7-E2 | | 28 | | | 7 | SHLD A154 | | | | | |
| A 155 | 29 | | 56N | | A | 30 | | | | | A | 10 | |
| | | | | | 15 | 16 | | | | | 5 | 6 | |
| A 155B | 3 | P2-20 | 19N | | 17 | | 41 | SHLD A155 | 25N | | | | |
| A 155E | | J7-F1 | 13N | | 14 | | 7 | P2-43 | 19N | | 18 | | 41 |
| A 155X | | J7-F2 | | 28 | | | 7 | SHLD A155 | | | | | |
| A 156 | 29 | | | | A | 30 | | | | | A | 10 | |
| | | | | | 15 | 16 | | | | | 5 | 6 | |
| A 156B | 3 | P2-22 | 19N | | 17 | | 41 | SHLD A156 | 25N | | | | |
| A 156E | | J7-G1 | 13N | | 14 | | 7 | P2-39 | 19N | | 18 | | 41 |
| A 156X | | J7-G2 | | 28 | | | 7 | SHLD A156 | | | | | |
| A 157 | 29 | | 56N | | A | 30 | | | | | A | 10 | |
| | | | | | 15 | 16 | | | | | 5 | 6 | |
| A 157B | 3 | P2-23 | 19N | | 17 | | 41 | SHLD A157 | 25N | | | | |
| A 157E | | J7-H1 | 13N | | 14 | | 7 | P2- 6 | 19N | | 18 | | 41 |

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T N | TERMINATION SPEC ITEM NO | | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T N | TERMINATION SPEC ITEM NO. | | NO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 157X | | J7-H2 | | 28 | | | 7 | SHLD A157 | | | | | |
| A 158 | 29 | | 56N | | A | 30 | | | | | A | 10 | |
| | | | | | 15 | 16 | | | | | 5 | 6 | |
| A 158B | 3 | P2-24 | 19N | | 17 | | 41 | SHLD A158 | 25N | | | | |
| A 158E | | J7-J1 | 13N | | 14 | | 7 | P2- 5 | 19N | | 18 | | 41 |
| A 158X | | J7-J2 | | 28 | | | 7 | SHLD A158 | | | | | |
| A 159 | 29 | | 56N | | A | 30 | | | | | A | 10 | |
| | | | | | 15 | 16 | | | | | 5 | 6 | |
| A 159B | 3 | P2-13 | 19N | | 17 | | 41 | SHLD A159 | 25N | | | | |
| A 159E | | J8-A1 | 13N | | 14 | | 8 | P2- 4 | 19N | | 18 | | 41 |
| A 159X | | J8-A2 | | 28 | | | 8 | SHLD A159 | | | | | |
| A 160 | 29 | | 56 | | A | 30 | | | | | A | 10 | |
| | | | | | 15 | 16 | | | | | 5 | 6 | |
| A 160B | 3 | P2-14 | 19N | | 17 | | 41 | SHLD A160 | 25N | | | | |
| A 160E | | J8-B1 | 13N | | 14 | | 8 | P2- 3 | 19N | | 18 | | 41 |
| A 160X | | J8-B2 | | 28 | | | 8 | SHLD A160 | | | | | |
| A 161 | 29 | | 56N | | A | 30 | | | | | A | 10 | |
| | | | | | 15 | 16 | | | | | 5 | 6 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1900096
SCALE-NONE
REV LTR R
SHEET 29 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T N | TERMINATION SPEC ITEM NO | | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T N | TERMINATION SPEC ITEM NO. | | NO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 161B | 3 | P2-15 | 19N | | 17 | | 41 | SHLD A161 | 25N | | | | |
| A 161E | | J8-C1 | 13N | | 14 | | 8 | P2- 2 | 19N | | 18 | | 41 |
| A 161X | | J8-C2 | | 28 | | | 8 | SHLD A161 | | | | | |
| A 162 | 29 | | 56N | | A | 30 | | | | | A | 10 | |
| | | | | | 15 | 16 | | | | | 5 | 6 | |
| A 162B | 3 | P2-50 | 19N | | 17 | | 41 | SHLD A162 | 25N | | | | |
| A 162E | | J8-D1 | 13N | | 14 | | 8 | P2- 1 | 19N | | 18 | | 41 |
| A 162X | | J8-D2 | | 28 | | | 8 | SHLD A162 | | | | | |
| A 163 | 29 | | 56N | | A | 30 | | | | | A | 10 | |
| | | | | | 15 | 16 | | | | | 5 | 6 | |
| A 163B | 3 | P2-47 | 19N | | 17 | | 41 | SHLD A163 | 25N | | | | |
| A 163E | | J8-E1 | 13N | | 14 | | 8 | P2-35 | 19N | | 18 | | 41 |
| A 163X | | J8-E2 | | 28 | | | 8 | SHLD A163 | | | | | |
| A 164 | 29 | | 56N | | A | 30 | | | | | A | 10 | |
| | | | | | 15 | 16 | | | | | 5 | 6 | |
| A 164B | 3 | P2-46 | 19N | | 17 | | 41 | SHLD A164 | 25N | | | | |
| A 164E | | J8-F1 | 13N | | 14 | | 8 | P2-25 | 19N | | 18 | | 41 |
| A 164X | | J8-F2 | | 28 | | | 8 | SHLD A164 | | | | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1900096
SCALE-NONE
REV LTR R
SHEET 30 OF 52

GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | T N | TERMINATION SPEC ITEM NO. | NO. | TO CIRCUIT POINT | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|
| A 165 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 165B | 3 | P2-45 | 19N | | 17 | 41 | SHLD A165 | 25N | | |
| A 165E | | J8-G1 | 13N | | 14 | 8 | P2-27 | 19N | 18 | 41 |
| A 165X | | J8-G2 | | 28 | | 8 | SHLD A165 | | | |
| A 166 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 166B | 3 | P2-42 | 19N | | 17 | 41 | SHLD A166 | 25N | | |
| A 166E | | J8-H1 | 13N | | 14 | 8 | P2-29 | 19N | 18 | 41 |
| A 166X | | J8-H2 | | 28 | | 8 | SHLD A166 | | | |
| A 167 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 167B | 3 | P2-41 | 19N | | 17 | 41 | SHLD A167 | 25N | | |
| A 167E | | J8-J1 | 13N | | 14 | 8 | P2-19 | 19N | 18 | 41 |
| A 167X | | J8-J2 | | 28 | | 8 | SHLD A167 | | | |
| A 168 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 168B | 3 | P6- 7 | 19N | | 18 | 15 | SHLD A168 | 25N | | |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE - NONE | REV LTR R | SHEET 31 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | T N | TERMINATION SPEC ITEM NO. | NO. | TO CIRCUIT POINT | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|
| A 168E | | J9-A1 | 13N | | 14 | 9 | P6- 8 | 19N | 18 | 15 |
| A 168X | | J9-A2 | | 28 | | 9 | SHLD A168 | | | |
| A 169 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 169B | 3 | P6-10 | 19N | | 18 | 15 | SHLD A169 | 25N | | |
| A 169E | | J9-B1 | 13N | | 14 | 9 | P6- 9 | 19N | 18 | 15 |
| A 169X | | J9-B2 | | 28 | | 9 | SHLD A169 | | | |
| A 170 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 170B | 3 | P5-12 | 19N | | 18 | 43 | SHLD A170 | 25N | | |
| A 170E | | J9-C1 | 13N | | 14 | 9 | P5-61 | 19N | 18 | 43 |
| A 170X | | J9-C2 | | | 28 | 9 | SHLD A170 | | | |
| A 171 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 9 6 | |
| A 171B | 3 | P5-11 | 19N | | 18 | 43 | SHLD A171 | 25N | | |
| A 171E | | J9-D1 | 13N | | 14 | 9 | P5-55 | 19N | 18 | 43 |
| A 171X | | J9-D2 | | 28 | | 9 | SHLD A171 | | | |
| A 172 | 29 | | 56 | | A 30 | | | | A 10 | |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE - NONE | REV LTR R | SHEET 32 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | T N | TERMINATION SPEC ITEM NO. | NO. | TO CIRCUIT POINT | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 15 16 | | | | 5 6 | |
| A 172B | 3 | P5- 8 | 19N | | 18 | 43 | SHLD A172 | 25N | | |
| A 172E | | J9-E1 | 13N | | 14 | 9 | P5-57 | 19N | 18 | 43 |
| A 172X | | J9-E2 | | 28 | | 9 | SHLD A172 | | | |
| A 173 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 173B | 3 | P5- 6 | 19N | | 18 | 43 | SHLD A173 | 25N | | |
| A 173E | | J9-F1 | 13N | | 14 | 9 | P5-59 | 19N | 18 | 43 |
| A 173X | | J9-F2 | | 28 | | 9 | SHLD A173 | | | |
| A 174 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 174B | 3 | P5- 4 | 19N | | 18 | 43 | SHLD A174 | 25N | | |
| A 174E | | J9-G1 | 13N | | 14 | 9 | P5-49 | 19N | 18 | 43 |
| A 174X | | J9-G2 | | 28 | | 9 | SHLD A174 | | | |
| A 175 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 175B | 3 | P5- 2 | 19N | | 18 | 43 | SHLD A175 | 25N | | |
| A 175E | | J9-H1 | 13N | | 14 | 9 | P5-51 | 19N | 18 | 43 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE - NONE | REV LTR R | SHEET 33 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | T N | TERMINATION SPEC ITEM NO. | NO. | TO CIRCUIT POINT | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|
| A 175X | | J9-H2 | | 28 | | 9 | SHLD A175 | | | |
| A 176 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 176B | 3 | P3-11 | 19N | | 18 | 42 | SHLD A176 | 25N | | |
| A 176E | | J10-A1 | 13N | | 14 | 10 | P3-58 | 19N | 18 | 42 |
| A 176X | | J10-A2 | | 28 | | 10 | SHLD A176 | | | |
| A 177 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 177B | 3 | P3- 9 | 19N | | 18 | 42 | SHLD A177 | 25N | | |
| A 177E | | J10-B1 | 13N | | 14 | 10 | P3-50 | 19N | 18 | 42 |
| A 177X | | J10-B2 | | 28 | | 10 | SHLD A177 | | | |
| A 178 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 178B | 3 | P3- 7 | 19N | | 18 | 42 | SHLD A178 | 25N | | |
| A 178E | | J10-C1 | 13N | | 14 | 10 | P3-52 | 19N | 18 | 42 |
| A 178X | | J10-C2 | | 28 | | 10 | SHLD A178 | | | |
| A 179 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE - NONE | REV LTR R | SHEET 34 OF 52

GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO 2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T/N 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TERMINATION SPEC 1 ITEM NO. | NO |
|---|---|---|---|---|---|---|---|---|---|---|
| A 179B | 3 | P3- 5 | 19N | | 18 | 42 | SHLD A179 | 25N | | |
| A 179E | | J10-D1 | 13N | | 14 | 10 | P3-54 | 19N | 18 | 42 |
| A 179X | | J10-D2 | | 28 | | 10 | SHLD A179 | | | |
| A 180 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 180B | 3 | P3- 3 | 19N | | 18 | 42 | SHLD A180 | 25N | | |
| A 180E | | J10-E1 | 13N | | 14 | 10 | P3-44 | 19N | 18 | 42 |
| A 180X | | J10-E2 | | 28 | | 10 | SHLD A180 | | | |
| A 181 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 181B | 3 | P3- 1 | 19N | | 17 | 42 | SHLD A181 | 25N | | |
| A 181E | 3 | J10-F1 | 13N | | 14 | 10 | P3-46 | 19N | 17 | 42 |
| A 181X | | J10-F2 | | 28 | | 10 | SHLD A181 | | | |
| A 182 | 3 | J11- 1 | 19N | | 17 | 20 | P1-25 | 19N | | 40 |
| A 183 | 3 | J11- 2 | 19N | | 17 | 20 | P3-24 | 19N | 17 | 42 |
| A 184 | 3 | J11- 3 | 19N | | 17 | 20 | P2-51 | 19N | | 41 |
| A 185 | 3 | J11- 4 | 19N | | 17 | 20 | P1-23 | 19N | | 40 |
| A 186 | 3 | J11- 5 | 19N | | 17 | 20 | P3-22 | 19N | 17 | 42 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096 | SCALE - NONE | REV LTR R | SHEET 35 OF

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO 2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T/N 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TERMINATION SPEC 1 ITEM NO. | NO |
|---|---|---|---|---|---|---|---|---|---|---|
| A 187 | 3 | J11- 6 | 19N | | 17 | 20 | P2-49 | 19N | | 41 |
| A 188 | 3 | J11- 7 | 19N | | 17 | 20 | P1-21 | 19N | | 40 |
| A 189 | 3 | J11- 8 | 19N | | 17 | 20 | P3-20 | 19N | 17 | 42 |
| A 190 | 3 | J11- 9 | 19N | | 17 | 20 | P2-48 | 19N | | 41 |
| A 191 | 3 | J11-10 | 19N | | 17 | 20 | P1-19 | 19N | | 40 |
| A 192 | 3 | J11-11 | 19N | | 17 | 20 | P3-18 | 19N | 17 | 42 |
| A 193 | 3 | J11-12 | 19N | | 17 | 20 | P2-44 | 19N | | 41 |
| A 194 | 3 | J11-13 | 19N | | 17 | 20 | P1-17 | 19N | | 40 |
| A 195 | 3 | J11-14 | 19N | | 17 | 20 | P3-16 | 19N | 17 | 42 |
| A 196 | 3 | J11-15 | 19N | | 17 | 20 | P2-43 | 19N | | 41 |
| A 197 | 3 | J11-16 | 19N | | 17 | 20 | P1-13 | 19N | | 40 |
| A 198 | 3 | J11-17 | 19N | | 17 | 20 | P3-14 | 19N | 17 | 42 |
| A 199 | 3 | J11-18 | 19N | | 17 | 20 | P2-39 | 19N | | 41 |
| A 200 | 3 | J11-19 | 19N | | 17 | 20 | P1-11 | 19N | | 40 |
| A 201 | 3 | J11-20 | 19N | | 17 | 20 | P3-12 | 19N | 17 | 42 |
| A 202 | 3 | J11-21 | 19N | | 17 | 20 | P2- 6 | 19N | | 41 |
| A 203 | 3 | J11-22 | 19N | | 17 | 20 | P1- 9 | 19N | | 40 |
| A 204 | 3 | J11-23 | 19N | | 17 | 20 | P3-10 | 19N | 17 | 42 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096 | SCALE - NONE | REV LTR R | SHEET 36 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. 2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T/N 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TERMINATION SPEC 1 ITEM NO. | NO |
|---|---|---|---|---|---|---|---|---|---|---|
| A 205 | 3 | J11-24 | 19N | | 17 | 20 | P2- 5 | 19N | | 41 |
| A 206 | 3 | J11-25 | 19N | | 17 | 20 | P1- 7 | 19N | | 40 |
| A 207 | 3 | J11-26 | 19N | | 17 | 20 | P3- 8 | 19N | 17 | 42 |
| A 208 | 3 | J11-27 | 19N | | 17 | 20 | P2- 4 | 19N | | 41 |
| A 209 | 3 | J11-28 | 19N | | 17 | 20 | P1- 5 | 19N | | 40 |
| A 210 | 3 | J11-29 | 19N | | 17 | 20 | P3- 6 | 19N | 17 | 42 |
| A 211 | 3 | J11-30 | 19N | | 17 | 20 | P2- 3 | 19N | | 41 |
| A 212 | 3 | J11-31 | 19N | | 17 | 20 | P1- 3 | 19N | | 40 |
| A 213 | 3 | J11-32 | 19N | | 17 | 20 | P3- 4 | 19N | 17 | 42 |
| A 214 | 3 | J11-33 | 19N | | 17 | 20 | P2- 2 | 19N | | 41 |
| A 215 | 3 | J11-34 | 19N | | 17 | 20 | P1- 1 | 19N | | 40 |
| A 216 | 3 | J11-35 | 19N | | 17 | 20 | P3- 2 | 19N | 17 | 42 |
| A 217 | 3 | J11-36 | 19N | | 17 | 20 | P2- 1 | 19N | | 41 |
| A 218 | 3 | J11-37 | 19N | | 17 | 20 | P1-61 | 19N | | 40 |
| A 219 | 3 | J11-38 | 19N | | 17 | 20 | P3-61 | 19N | 17 | 42 |
| A 220 | 3 | J11-39 | 19N | | 17 | 20 | P2-35 | 19N | | 41 |
| A 221 | | DELETED | | | | | | | | |
| A 222 | 3 | J15-P | 25Y | | 37 | 45 | P3-67 | 19N | 17 | 42 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096 | SCALE - NONE | REV LTR R | SHEET 37 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO 2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T/N 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TERMINATION SPEC 1 ITEM NO. | NO |
|---|---|---|---|---|---|---|---|---|---|---|
| A 223 | | DELETED | | | | | | | | |
| A 224 | 3 | J11-43 | 19N | | 17 | 20 | P1-65 | 19N | | 40 |
| A 225 | 3 | J11-44 | 19N | | 17 | 20 | P3-64 | 19N | 17 | 42 |
| A 226 | 3 | J11-45 | 19N | | 17 | 20 | P2-27 | 19N | | 41 |
| A 227 | 3 | J11-46 | 19N | | 17 | 20 | P1-53 | 19N | | 40 |
| A 228 | 3 | J11-47 | 19N | | 17 | 20 | P3-66 | 19N | 17 | 42 |
| A 229 | 3 | J11-48 | 19N | | 17 | 20 | P2-29 | 19N | | 41 |
| A 230 | 3 | J11-49 | 19N | | 17 | 20 | P1-57 | 19N | | 40 |
| A 231 | 3 | J11-50 | 19N | | 17 | 20 | P3-56 | 19N | 17 | 42 |
| A 232 | 3 | J11-51 | 19N | | 17 | 20 | P2-19 | 19N | | 41 |
| A 236 | 3 | J12- 1 | 19N | | 17 | 19 | P2-52 | 19N | 18 | 41 |
| A 237 | 3 | J12- 2 | 19N | | 17 | 19 | P2-53 | 19N | 18 | 41 |
| A 238 | 3 | J12- 3 | 19N | | 17 | 19 | P2-54 | 19N | 18 | 41 |
| A 239 | 3 | J12- 4 | 19N | | 17 | 19 | P2-55 | 19N | 18 | 41 |
| A 240 | 3 | J12- 5 | 19N | | 17 | 19 | P2-56 | 19N | 18 | 41 |
| A 241 | 3 | J12- 6 | 19N | | 17 | 19 | P2-57 | 19N | 18 | 41 |
| A 242 | 3 | J12- 7 | 19N | | 17 | 19 | P2-58 | 19N | 18 | 41 |
| A 243 | 3 | J12- 8 | 19N | | 17 | 19 | P2-59 | 19N | 18 | 41 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096 | SCALE NONE | REV LTR R | SHEET 38 OF 52

GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO | FROM CIRCUIT POINT | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET | TERMINATION SPEC ITEM NO | NO. | TO CIRCUIT POINT | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET | TERMINATION SPEC ITEM NO | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 244 | 3 | J12- 9 | 19N | 17 | 19 | P2-60 | 19N | 18 | 41 |
| A 245 | 3 | J12-10 | 19N | 18 | 19 | P7-38 | 19N | 17 | 16 |
| A 246 | 3 | J12-11 | 19N | 18 | 19 | P2-61 | 19N | 18 | 41 |
| A 247 | 3 | J12-11 | 19N | 18 | 19 | S2A- 1A | 25Y | | 30 |
| A 248 | 3 | J12-12 | 19N | 18 | 19 | P2-62 | 19N | 18 | 41 |
| A 249 | 3 | J12-12 | 19N | 18 | 19 | S2A- 3A | 25Y | | 30 |
| A 250 | 3 | J12-16 | 19N | 18 | 19 | P3-48 | 19N | 18 | 42 |
| A 251 | 3 | J12-17 | 19N | 18 | 19 | P3-37 | 19N | 18 | 42 |
| A 252 | 3 | J12-18 | 19N | 18 | 19 | P3-38 | 19N | 18 | 42 |
| A 253 | 3 | J12-19 | 19N | 18 | 19 | P3-39 | 19N | 18 | 42 |
| A 254 | 3 | J12-20 | 19N | 18 | 19 | P3-40 | 19N | 18 | 42 |
| A 255 | 3 | J12-21 | 19N | 18 | 19 | P3-41 | 19N | 18 | 42 |
| A 256 | 3 | J12-22 | 19N | 18 | 19 | P3-42 | 19N | 18 | 42 |
| A 257 | 3 | J12-23 | 19N | 19 | 19 | P3-32 | 19N | 18 | 42 |
| A 258 | 3 | J12-24 | 19N | 18 | 19 | P3-33 | 19N | 18 | 42 |
| A 259 | 3 | J12-26 | 19N | 18 | 19 | P3-34 | 19N | 17 | 42 |
| A 260 | 3 | J12-27 | 19N | 18 | 19 | P3-31 | 19N | 17 | 42 |
| A 261 | 3 | J12-28 | 19N | 18 | 19 | P5-40 | 19N | 17 | 43 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO | FROM CIRCUIT POINT | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET | TERMINATION SPEC ITEM NO | NO. | TO CIRCUIT POINT | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET | TERMINATION SPEC ITEM NO | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 262 | 3 | J12-29 | 19N | 18 | 19 | P5-18 | 19N | 17 | 43 |
| A 263 | 3 | J12-30 | 19N | 18 | 19 | P7-10 | 19N | 17 | 16 |
| A 264 | 3 | P1-14 | 19N | | 40 | P3-15 | 19N | 17 | 42 |
| A 265 | 3 | P1-16 | 19N | | 40 | P3-17 | 19N | 17 | 42 |
| A 266 | 3 | P1-18 | 19N | 18 | 40 | P3-19 | 19N | 17 | 42 |
| A 267 | 3 | J15-X | 25Y | | 45 | P3-21 | 19N | 17 | 42 |
| A 268 | 3 | P1-22 | 19N | | 40 | P3-23 | 19N | 17 | 42 |
| A 269 | 3 | P1-24 | 19N | | 40 | P3-25 | 19N | 17 | 42 |
| A 270 | 3 | P1-43 | 19N | | 40 | P3-45 | 19N | 17 | 42 |
| A 271 | 3 | P1-44 | 19N | | 40 | P3-47 | 19N | 17 | 42 |
| A 272 | 1 | | | A 10 | | | | A 10 | |
| | | | | | | | | 7 8 | |
| A 272B | 4 | E27 | 25N | | 11 | SHLD A272 | 25N | | |
| A 272L | | P1-15 | 19N | 17 | 40 | K1- 7 | 25Y | 37 | 44 |
| A 272R | | P1-50 | 19N | 17 | 40 | K1- 4 | 25Y | 37 | 44 |
| A 273 | 3 | P1-52 | 19N | | 40 | P3-51 | 19N | 17 | 42 |
| A 274 | 3 | P1-53 | 19N | | 40 | P3-53 | 19N | 17 | 42 |
| A 275 | 3 | P1-54 | 19N | | 40 | P3-43 | 19N | 17 | 42 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE - NONE | REV LTR R | SHEET 40 OF 5

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO | FROM CIRCUIT POINT | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET | TERMINATION SPEC ITEM NO | NO. | TO CIRCUIT POINT | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET | TERMINATION SPEC ITEM NO | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 276 | 3 | P1-56 | 19N | | 40 | P3-57 | 19N | 17 | 42 |
| A 277 | | P1-58 | 19N | | 40 | P3-59 | 19N | 17 | 42 |
| A 278 | | P1-60 | 19N | | 40 | P3-49 | 19N | 17 | 42 |
| A 279 | 3 | P1-62 | 19N | | 40 | P3-63 | 19N | 17 | 42 |
| A 280 | 3 | P1-64 | 19N | | 40 | P3-65 | 19N | 17 | 42 |
| A 281 | 3 | P1-66 | 19N | | 40 | P3-55 | 19N | 17 | 42 |
| A 282 | | DELETED | | | | | | | |
| A 283 | 1 | | | A 10 | | | | A 10 | |
| | | | | | | | | 7 8 | |
| A 283B | 3 | E27 | 25N | | 11 | SHLD A283 | 25N | | |
| A 283L | | P2-40 | 19N | 17 | 41 | K1-13 | 25Y | 37 | 44 |
| A 283R | | P2-21 | 19N | 17 | 41 | K1-10 | 25Y | 37 | 44 |
| A 284 | 3 | P3-13 | 19N | 17 | 42 | P6-19 | 19N | 17 | 15 |
| A 285 | 3 | P3-26 | 19N | 17 | 42 | S10SW2-NC | 25Y | | 26 |
| A 286 | 3 | P3-32 | 19N | 18 | 42 | P5-38 | 19N | 17 | 43 |
| A 287 | 3 | P3-33 | 19N | 18 | 42 | P5-39 | 19N | 17 | 43 |
| A 288 | 3 | P3-37 | 19N | 18 | 42 | P5-44 | 19N | 17 | 43 |
| A 289 | 3 | P3-38 | 19N | 18 | 42 | P5-45 | 19N | 17 | 43 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE - NONE | REV LTR R | SHEET 41 OF

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO | FROM CIRCUIT POINT | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET | TERMINATION SPEC ITEM NO | NO. | TO CIRCUIT POINT | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET | TERMINATION SPEC ITEM NO | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 290 | 3 | P3-39 | 19N | 18 | 42 | P5-46 | 19N | 17 | 43 |
| A 291 | 3 | P3-40 | 19N | 18 | 42 | P5-47 | 19N | 17 | 43 |
| A 292 | 3 | P3-41 | 19N | 18 | 42 | P5-48 | 19N | 17 | 43 |
| A 293 | 3 | P3-42 | 19N | 18 | 42 | P5-37 | 19N | 17 | 43 |
| A 294 | 3 | P3-48 | 19N | 18 | 42 | P5-43 | 19N | 17 | 43 |
| A 296 | | P3-60 | 19N | 17 | 42 | P6-17 | 19N | 17 | 15 |
| A 297 | 3 | P5-17 | 19N | 17 | 43 | S10SW2-NO | 25Y | | 26 |
| A 298 | 1 | | | A 10 | | | | A 10 | |
| | | | | | | | | 7 8 | |
| A 298B | 4 | E27 | 25N | | 11 | SHLD A298 | 25N | | |
| A 298L | | P5-10 | 19N | 17 | 43 | P6-20 | 19N | 17 | 15 |
| A 298R | | P5-56 | 19N | 17 | 43 | P6-18 | 19N | 17 | 15 |
| A 299 | 2 | | | 11 | | | | 5 6 10 | |
| A 299B | 4 | E28 | 25N | | 33 | SHLD A299 | 25N | | |
| A 299W | | P5-53 | 19N | 17 | 43 | XF2- 2 | 25Y | | 24 |
| A 300 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 300A | 4 | SHLD A300 | 25N | | | E27 | 25N | | 11 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE - NONE | REV LTR R | SHEET 42 OF 52

GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO. | 2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | TERMINATION SPEC 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | TERMINATION SPEC 1 ITEM NO. | NO |
|---|---|---|---|---|---|---|---|---|---|---|
| A 300L | | | P6-12 | 19N | 17 | 15 | S3A-11B | 25Y | | 39 |
| A 300R | | | P6-11 | 19N | 17 | 15 | S3A-11A | 25Y | | 39 |
| A 301 | 3 | | P6-15 | 19N | 17 | 15 | S10SW1-NO | 25Y | | 26 |
| A 302 | 3 | | P6-22 | 19N | 17 | 15 | S13SW3-NO | 25Y | | 27 |
| A 303 | 3 | | P6-23 | 19N | 17 | 15 | S12SW1-NO | 25Y | | 25 |
| A 304 | 3 | | P6-24 | 19N | 17 | 15 | S12SW1-NC | 25Y | | 25 |
| A 305 | 3 | | P6-25 | 19N | 17 | 15 | S12SW1-C | 25Y | | 25 |
| A 306 | 3 | | P6-26 | 19N | 17 | 15 | XDS6-A | 25Y | | 25 |
| A 307 | 3 | | P6-27 | 19N | 17 | 15 | S9SW1-NO | 25Y | | 25 |
| A 308 | 3 | | P6-28 | 19N | 18 | 15 | S9SW1-C | 25Y | | 25 |
| A 309 | 3 | | P6-46 | 19N | 18 | 15 | S10SW2-C | 25Y | | 26 |
| A 310 | 3 | | P6-47 | 19N | 17 | 15 | S2A-5B | 25Y | | 30 |
| A 311 | 3 | | P6-52 | 19N | 17 | 15 | S7A-11A | 25Y | | 31 |
| A 312 | 3 | | P6-53 | 19N | 17 | 15 | S6A-11A | 25Y | | 32 |
| A 313 | 3 | | P6-58 | 19N | 17 | 15 | S5SW1-NC | 25Y | | 36 |
| A 314 | 3 | | P7- 1 | 19N | 18 | 16 | S6A- 2A | 25Y | | 32 |
| A 315 | 3 | | P7- 2 | 19N | 18 | 16 | S6A- 3A | 25Y | | 32 |
| A 316 | 3 | | P7- 3 | 19N | 18 | 16 | S6A- 4A | 25Y | | 32 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE - NONE | REV LTR R | SHEET 43 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO | 2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | TERMINATION SPEC 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | TERMINATION SPEC 1 ITEM NO. | NO |
|---|---|---|---|---|---|---|---|---|---|---|
| A 317 | 3 | | P7- 4 | 19N | 18 | 16 | S6A- 5A | 25Y | | 32 |
| A 318 | 3 | | P7- 5 | 19N | 18 | 16 | S6A- 6A | 25Y | | 32 |
| A 319 | 3 | | P7- 6 | 19N | 18 | 16 | S6A- 7A | 25Y | | 32 |
| A 320 | 3 | | P7- 7 | 19N | 18 | 16 | S6A- 8A | 25Y | | 32 |
| A 321 | 3 | | P7- 8 | 19N | 18 | 16 | S6A- 9A | 25Y | | 32 |
| A 322 | 3 | | P7- 9 | 19N | 18 | 16 | S6A-10A | 25Y | | 32 |
| A 323 | 3 | | P7-29 | 19N | 17 | 16 | S7A-10A | 25Y | | 31 |
| A 324 | 3 | | P7-30 | 19N | 17 | 16 | S7A- 9A | 25Y | | 31 |
| A 325 | 3 | | P7-31 | 19N | 17 | 16 | S7A- 8A | 25Y | | 31 |
| A 326 | 3 | | P7-32 | 19N | 17 | 16 | S7A- 7A | 25Y | | 31 |
| A 327 | 3 | | P7-33 | 19N | 17 | 16 | S7A- 6A | 25Y | | 31 |
| A 328 | 3 | | P7-34 | 19N | 17 | 16 | S7A- 5A | 25Y | | 31 |
| A 329 | 3 | | P7-35 | 19N | 17 | 16 | S7A- 4A | 25Y | | 31 |
| A 330 | 3 | | P7-36 | 19N | 17 | 16 | S7A- 3A | 25Y | | 31 |
| A 331 | 3 | | P7-37 | 19N | 17 | 16 | S7A- 2A | 25Y | | 31 |
| A 332 | 1 | | | | A 10 | | | | A 10 | |
| | | | | | | | | | 7 8 | |
| A 332B | 4 | | E28 | 25N | | 33 | SHLD A332 | 25N | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE - NONE | REV LTR R | SHEET 44 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO. | 2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | TERMINATION SPEC 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | TERMINATION SPEC 1 ITEM NO. | NO |
|---|---|---|---|---|---|---|---|---|---|---|
| A 332L | | | S1A- 1B | 25Y | | 38 | S2B- 1B | 25Y | | 30 |
| A 332R | | | S1A- 1A | 25Y | | 38 | S2B- 1A | 25Y | | 30 |
| A 333 | 1 | | | | A 10 | | | | A 10 | |
| | | | | | | | | | 7 8 | |
| A 333A | 4 | | E28 | 25N | | 33 | SHLD A333 | 25N | | |
| A 333L | | | S1A- 3B | 25Y | | 38 | S2B- 3B | 25Y | | 30 |
| A 333R | | | S1A- 3A | 25Y | | 38 | S2B- 3A | 25Y | | 30 |
| A 334 | 3 | | S11B- 6A | 25Y | | 28 | S1^SW2-C | 25Y | | 26 |
| A 335 | 1 | | | | A 10 | | | | A 10 | |
| | | | | | 7 8 | | | | | |
| A 335A | 4 | | SHLD A335 | 25N | | | E28 | 25N | | 33 |
| A 335L | | | S2B- 1B | 25Y | | 30 | S8A- 1B | 25Y | | 29 |
| A 335R | | | S2B- 1A | 25Y | | 30 | S8A- 1A | 25Y | | 29 |
| A 336 | 1 | | | | A 10 | | | | A 10 | |
| | | | | | 7 8 | | | | | |
| A 336A | 4 | | SHLD A336 | 25N | | | E28 | 25N | | 33 |
| A 336L | | | S2B- 3B | 25Y | | 30 | S8A- 3B | 25Y | | 29 |
| A 336R | | | S2B- 3A | 25Y | | 30 | S8A- 3A | 25Y | | 29 |

THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE - NONE | REV LTR R | SHEET 45 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO. | 2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | TERMINATION SPEC 1 ITEM NO | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | TERMINATION SPEC 1 ITEM NO. | NO |
|---|---|---|---|---|---|---|---|---|---|---|
| A 337 | 3 | | S4SW1-C | 25Y | | 37 | S4SW2-C | 25Y | | 37 |
| A 338 | 3 | | S4SW1-C | 25Y | | 37 | S13SW1-C | 25Y | | 27 |
| A 339 | 3 | | S4SW1-NO | 25Y | | 37 | XDS2-A | 25Y | | 37 |
| A 340 | 3 | | S4SW2-NO | 25Y | | 37 | S5SW1-C | 25Y | | 36 |
| A 341 | 3 | | S5SW1-C | 25Y | | 36 | S5SW2-C | 25Y | | 36 |
| A 342 | 3 | | S5SW2-NC | 25Y | | 36 | XDS3-A | 25Y | | 36 |
| A 343 | 3 | | S6A- 1A | 25Y | | 32 | XDS1-10 | 25Y | | 35 |
| A 344 | 3 | | S6A- 2A | 25Y | | 32 | XDS1- 1 | 25Y | | 35 |
| A 345 | 3 | | S6A- 3A | 25Y | | 32 | XDS1- 2 | 25Y | | 35 |
| A 346 | 3 | | S6A- 4A | 25Y | | 32 | XDS1- 3 | 25Y | | 35 |
| A 347 | 3 | | S6A- 5A | 25Y | | 32 | XDS1- 4 | 25Y | | 35 |
| A 348 | 3 | | S6A- 6A | 25Y | | 32 | XDS1- 5 | 25Y | | 35 |
| A 349 | 3 | | S6A- 7A | 25Y | | 32 | XDS1- 6 | 25Y | | 35 |
| A 350 | 3 | | S6A- 8A | 25Y | | 32 | XDS1- 7 | 25Y | | 35 |
| A 351 | 3 | | S6A- 9A | 25Y | | 32 | XDS1- 8 | 25Y | | 35 |
| A 352 | 3 | | S6A-10A | 25Y | | 32 | XDS1- 9 | 25Y | | 35 |
| A 353 | 3 | | S7A- 1A | 25Y | | 31 | XDS1-20 | 25Y | | 35 |
| A 354 | 3 | | S7A- 2A | 25Y | | 31 | XDS1-11 | 25Y | | 35 |

THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE - NONE | REV LTR R | SHEET 46 OF 52

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TERMINATION SPEC ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 355 | 3 | S7A- 3A | 25Y | | 31 | XDS1-12 | 25Y | | 35 |
| A 356 | 3 | S7A- 4A | 25Y | | 31 | XDS1-13 | 25Y | | 35 |
| A 357 | 3 | S7A- 5A | 25Y | | 31 | XDS1-14 | 25Y | | 35 |
| A 358 | 3 | S7A- 6A | 25Y | | 31 | XDS1-15 | 25Y | | 35 |
| A 359 | 3 | S7A- 7A | 25Y | | 31 | XDS1-16 | 25Y | | 35 |
| A 360 | 3 | S7A- 8A | 25Y | | 31 | XDS1-17 | 25Y | | 35 |
| A 361 | 3 | S7A- 9A | 25Y | | 31 | XDS1-18 | 25Y | | 35 |
| A 362 | 3 | S7A-10A | 25Y | | 31 | XDS1-19 | 25Y | | 35 |
| A 363 | 3 | S9SW2-C | 25Y | | 25 | S4SW2-C | 25Y | | 37 |
| A 364 | 3 | S9SW2-C | 25Y | | 25 | S10SW1-C | 25Y | | 26 |
| A 365 | 3 | S9SW2-NO | 25Y | | 25 | S12SW1-C | 25Y | | 25 |
| A 366 | 3 | S9SW2-NO | 25Y | | 25 | XDS4-A | 25Y | | 25 |
| A 367 | 3 | S10SW1-C | 25Y | | 28 | S11- 6A | 25Y | | 28 |
| A 368 | 3 | S10SW1-NO | 25Y | | 26 | XDS5-A | 25Y | | 26 |
| A 369 | 3 | S10SW1-NC | 25Y | | 26 | XDS5-B | 25Y | | 26 |
| A 370 | 3 | S13SW1-C | 25Y | | 27 | XF1- 2 | 25Y | | 22 |
| A 971 | 3 | S13SW1-NO | 25Y | | 27 | XDS7-B | 25Y | | 27 |
| A 372 | 3 | S13SW2-C | 25Y | | 27 | S13SW3-C | 25Y | | 27 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE-NONE | REV LTR R | SHEET 47 OF 52

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| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TERMINATION SPEC ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 373 | 3 | S13SW2-NO | 25Y | | 27 | XDS7-G | 25Y | | 27 |
| A 374 | 3 | XDS1-G | 25Y | 20 | 34 | XDS2-G | 25Y | | 37 |
| A 375 | 3 | XDS1-G | 25Y | | 34 | XDS5-G | 25Y | | 26 |
| A 376 | 3 | XDS2-A | 25Y | | 37 | XDS2-C | 25Y | | 37 |
| A 377 | 3 | XDS2-G | 25Y | | 37 | XDS3-G | 25Y | | 36 |
| A 378 | 3 | XDS3-A | 25Y | | 36 | XDS3-C | 25Y | | 36 |
| A 379 | 3 | XDS3-G | 25Y | | 36 | XDS4-G | 25Y | | 25 |
| A 380 | 3 | XDS4-A | 25Y | | 25 | XDS4-C | 25Y | | 25 |
| A 381 | 3 | XDS4-G | 25Y | | 25 | XDS6-G | 25Y | | 25 |
| A 382 | 3 | XDS5-A | 25Y | | 26 | XDS5-D | 25Y | | 26 |
| A 383 | 3 | XDS5-B | 25Y | | 26 | XDS5-C | 25Y | | 26 |
| A 384 | 3 | XDS5-G | 25Y | | 26 | S13SW3-C | 25Y | | 27 |
| A 385 | 3 | XDS6-A | 25Y | | 25 | XDS6-C | 25Y | | 25 |
| A 386 | 3 | XDS6-G | 25Y | | 25 | P6-57 | 19N | 18 | 15 |
| A 387 | 3 | XDS7-B | 25Y | | 27 | XDS7-C | 25Y | | 27 |
| A 388 | 4 | E3 | 25N | | 12 | E2 | 25N | | 18 |
| A 389 | 4 | E4 | 25N | | 13 | E2 | 25N | | 18 |
| A 390 | 4 | E5 | 25N | | 14 | E2 | 25N | | 18 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE-NONE | REV LTR R | SHEET 48 OF 52

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| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | 2> | TERMINATION SPEC ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|
| A 412 | 4 | E27 | 25N | | | 11 | E2 | 25N | | 18 |
| A 413 | 4 | E28 | 25N | | | 33 | E2 | 25N | | 18 |
| A 418 | 4 | P6-59 | 19N | | | 15 | E27 | 25N | | 11 |
| A 419 | 3 | S2A-2A | 25Y | | | 30 | S2A-4A | 25Y | | 30 |
| A 420 | 29 | | | | A 30<br>15 16 | | | | A 10<br>5 6 | |
| A 420B | 3 | P5-16 | 19N | | 18 | 43 | SHLD A420 | 25N | | |
| A 420E | | J4-H1 | 13N | | 14 | 4 | P5-65 | 19N | 18 | 43 |
| A 420X | | J4-H2 | | 28 | | 4 | SHLD A420 | | | |
| A 421 | 3 | S11B-3A | 25Y | | | 28 | P2-63 | 19N | 17 | 41 |
| A 422 | 3 | S11R-5A | 25Y | | | 28 | S2A-5A | 25Y | | 30 |
| A 423 | 3 | P7-39 | 19N | | 17 | 16 | J11-52 | 19N | 17 | 20 |
| A 424 | 3 | P7-40 | 19N | | 17 | 16 | J11-54 | 19N | 17 | 20 |
| A 425 | 3 | P6-43 | 19N | | 17 | 15 | J11-55 | 19N | 17 | 20 |
| A 426 | 3 | P7-41 | 19N | | 17 | 16 | J11-56 | 19N | 17 | 20 |
| A 427 | 3 | P7-42 | 19N | | 17 | 16 | J11-57 | 19N | 17 | 20 |
| A 428 | 3 | P6-44 | 19N | | 17 | 15 | J11-58 | 19N | 17 | 20 |
| A 429 | 3 | S1A-2A | 25Y | | | 38 | S1A-2B | 25Y | | 38 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE-NONE | REV LTR R | SHEET 49 OF 52

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| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TERMINATION SPEC ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 430 | 3 | S2B-2A | 25Y | | 30 | S2B-2B | 25Y | | 30 |
| A 431 | 3 | S8A-2A | 25Y | | 29 | S8A-2B | 25Y | | 29 |
| A 432 | 3 | P3-30 | 19N | 17 | 42 | S10SW3-NC | 25Y | | 26 |
| A 433 | 3 | P5-24 | 19N | 17 | 43 | S10SW3-NO | 25Y | | 26 |
| A 434 | 3 | S10SW2-C | 19N | | 2 | S10SW3-C | 25Y | | 26 |
| A 435 | 3 | S13SW4-NC | 25Y | | 27 | P6-28 | 19N | 17 | 15 |
| A 436 | 3 | S9SW2-NO | 25Y | | 25 | XDS7-A | 25Y | | 27 |
| A 437 | 3 | XDS7-A | 25Y | | 27 | XDS7-D | 25Y | | 27 |
| A 438 | 3 | K1- 3 | 25Y | 37 | 44 | J14-B | 25Y | | 45 |
| A 439 | 3 | K1- 5 | 25Y | 37 | 44 | P6- 1 | 19N | 17 | 15 |
| A 440 | 3 | K1- 6 | 25Y | 37 | 44 | K1-12 | 25Y | | 44 |
| A 441 | 3 | K1- 8 | 25Y | 37 | 44 | P6- 2 | 19N | 17 | 15 |
| A 442 | 3 | K1- 9 | 25Y | 37 | 44 | J15-A | 25Y | | 45 |
| A 443 | 3 | K1-11 | 25Y | 37 | 44 | P6- 5 | 19N | 17 | 15 |
| A 444 | 3 | K1-12 | 25Y | 37 | 44 | J15-X | 25Y | | 45 |
| A 445 | 3 | K1-14 | 25Y | 37 | 44 | P6- 6 | 19N | 17 | 15 |
| A 446 | 3 | K1-15 | 25Y | 37 | 44 | J15-W | 25Y | 37 | 45 |
| A 447 | 3 | K1-16 | 25Y | 37 | 44 | J3-X | 19N | | 3 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE-NONE | REV LTR R | SHEET 50 OF 52

GFL WIRING HARNESS A R 1900096

| CONDUCTOR |  |  | FROM |  |  |  |  | TO |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH |  |  | CUT WIRE OR SHIELD<br>STRIP WIRE OR JACKET |  |  | TERMINATION SPEC. 1 |  | CUT WIRE OR SHIELD<br>STRIP WIRE OR JACKET |  |  | TERMINATION SPEC 1 |  |
| NUMBER | ITEM NO. | 2 | CIRCUIT POINT | 2 | T/N | ITEM NO. | NO. | CIRCUIT POINT | 2 | T/N | ITEM NO. | NO. |
| A 448 | 3 |  | K1-18 | 25 | Y | 37 | 44 | U15-Y | 25 | Y | 37 | 45 |
| A 449 | 3 |  | K1-19 | 25 | Y | 37 | 44 | U3-Z | 19 | N |  | 3 |
| A 450 | 3 |  | K1- 1 | 25 | Y | 37 | 44 | S11A-6A | 25 | Y |  | 28 |
| A 451 | 3 |  | K1- 2 | 25 | Y | 37 | 44 | P3-29 | 19 | N | 17 | 42 |
| A 452 | 3 |  | S13SWZ-C | 25 | Y |  | 27 | P3-28 | 19 | N | 17 | 42 |
| A 453 | 3 |  | U3-Y | 19 | N |  | 3 | K1- 6 | 25 | Y |  | 44 |

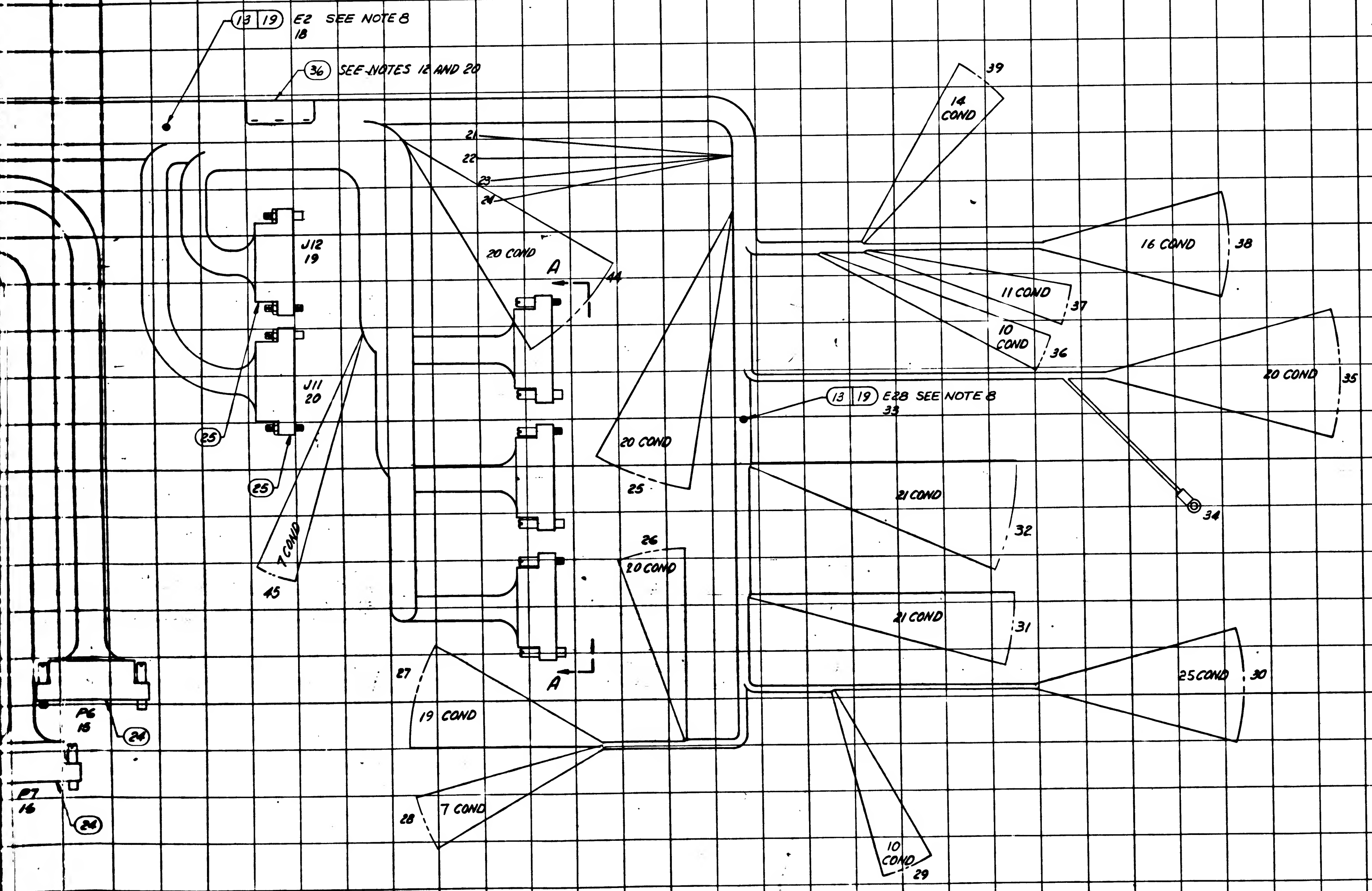
1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

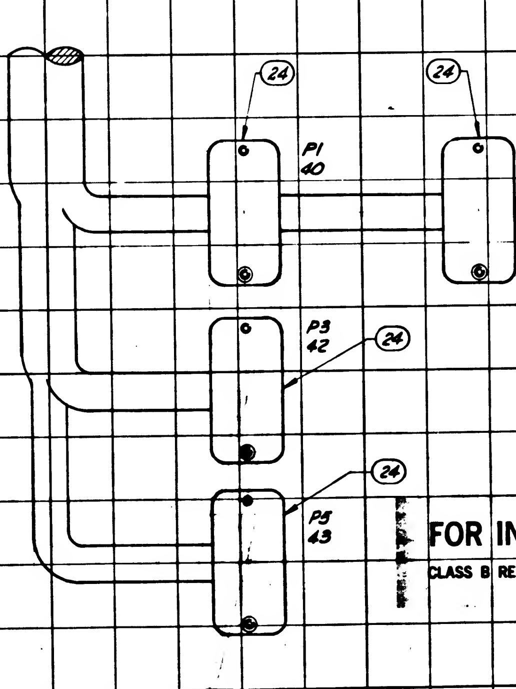
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

| | | | |
|---|---|---|---|
| MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096 | |
| SCALE - NONE | REV LTR R | | SHEET 51 OF 52 |

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD |
| M H | | THIS SHEET ADDED<br>PER TDRR 04869 | | 03 | |

FOR ADDITIONAL REVISION RECORD
SEE SHEET 1





PARTIAL VIEW AA

**FOR INFORMATION ONLY**
CLASS B RELEASE TDR No. 01801 DATE 2 July 63

| | |
|---|---|
| 1900057-011 | 1900057-011 |
| NEXT ASSY | USED ON |
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 8 OCT 63 DATE
CHECKED 10 OCT 63
APPROVAL 15 OCT 63
APPROVAL
NASA APPROVAL W. J. 12-3-63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

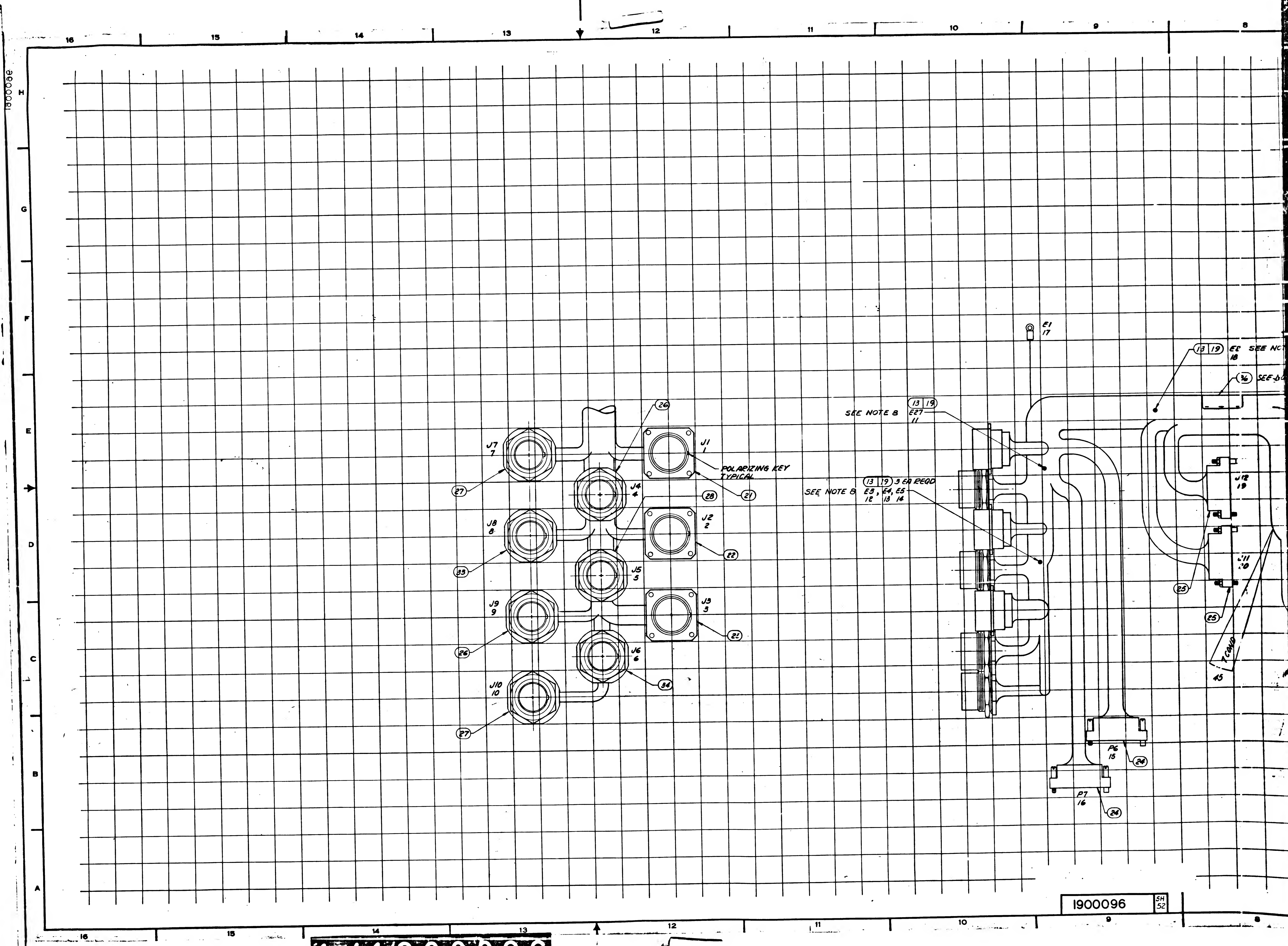
WIRING HARNESS A

CODE IDENT NO SIZE J2 1900096
SCALE 1/1 SHEET 52 OF 52

1900096 SH 52

1900096

2/1900096



1900096 SH 52

1/1900096

| APPLICATION | | REVISIONS | | | |
|---|---|---|---|---|---|
| NEXT ASSY | USED ON | SYM | DESCRIPTION | DATE | APPROVAL |
| 1900057-011 | 1900057-011 | H | REPLACES REV. G WITH CHANGE PER MXC 191409<br>REVISED PER TDR 04869 | 63 | TP |
| | | J | CHANGE IN ACCORDANCE WITH MXC 191496 | 9 JAN 64 | WSM |
| | | K | CHANGE IN ACCORDANCE WITH MXC 192540 | 5 FEB 64 | S.A. |
| | | L | CHANGE IN ACCORDANCE WITH CM193527 | 19 FEB 64 | S.A. |
| | | M | CHANGE IN ACCORDANCE WITH CM-193646 | 24-FEB-64 | |
| | | N | CHANGE IN ACCORDANCE WITH CM-193808 PER TDRR 08398 | 16 MAR 64 | JM. |
| | | P | CHANGE IN ACCORDANCE WITH CM 197139<br>REVISED PER TDR 10253 | 21 MAY 64 | |
| | | R | CHANGE IN ACCORDANCE WITH CM 197969 TDRR 12895 | 15 JUNE 64 | WK |

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**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 01801 DATE 2 July 63

Ⓗ REPLACES REV(G) WITH CHANGE

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| REV | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | S | S | S | R |
| SHEET | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 |

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S | REV STATUS | REV | S | S | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R |
| 1A | OF SHEETS | SHEET | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |

| | |
|---|---|
| AC SPARK PLUG DIVISION , GMC<br>MILWAUKEE, WISCONSIN | MANNED<br>SPACECRAFT CENTER<br>HOUSTON, TEXAS |
| ACSP PN | |
| DRAWN DATE 10 OCT 63<br>CHECKED 14 OCT 63<br>APPROVAL 15 OCT 63<br>APPROVAL 12/2/63 | WIRING HARNESS A |
| NASA APPROVAL 12-3<br>MIT APPROVAL | CODE IDENT NO. — SIZE A — 1900096 — REV S |
| CONTRACT NAS 9-497 | SCALE — SHEET 1 OF 52 |

## REVISIONS

| SYM | DESCRIPTION | DATE | APPROVAL |
|---|---|---|---|
| S | CHANGE IN ACCORDANCE WITH CM 198162 TDRR 12887 | 19 JUN 64 | J J J<br>FK |

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| REVISION | NASA DRAWING NO. |
|---|---|
| S | 1900096<br>SHEET 1A OF 52 |

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## REVISION STATUS OF SHEETS

| SH | REV | SH | REV | SH | REV | SH | REV | SH | REV | SH | REV | SH | REV | SH | REV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 | R | | | | | | | | | | | | | | |
| 51 | R | | | | | | | | | | | | | | |
| 52 | S | | | | | | | | | | | | | | |

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| REVISION | NASA DRAWING NO. |
|---|---|
| S | 1900096<br>SHEET 2 OF 52 |

PENNANT GENERAL NOTES

NOTE

1 SEE CONDUCTOR CHART. PENNANT NOTE 1.

2 SEE CONDUCTOR CHART. PENNANT NOTE 2.

3 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

4 MARK CONDUCTOR IDENTIFICATION PER ND1002019.

5 MARK CONDUCTOR IDENTIFICATION ON SINGLE CONDUCTORS PER ND1002019 OMITTING ALL SUFFIX LETTERS EXCEPT A AND B.

6 SPACING OF CONDUCTOR IDENTIFICATION SHALL BE EVERY 1.2 INCHES.

7 SPIRALLING OF THE MARKING IS ALLOWED.

8 MARK SLEEVING WITH REFERENCE DESIGNATION AS SHOWN .12 INCH HIGH. COLOR BLACK PER ND1002019.

9 MARK SLEEVING OF MULTI-CONDUCTORS WITH THE CONDUCTOR NUMBER .12 INCH HIGH. COLOR BLACK. PER ND1002019 WHEN SLEEVING ITEM NUMBERS FOLLOW AN A OR T IN THE ACCESSORIES ITEM NUMBER FIELD.

10 A OR T PREFIX IN THE ACCESSORIES ITEM NUMBER COLUMN INDICATES THE READING POSITION AWAY FROM TERMINATION OR TOWARD TERMINATION RESPECTIVELY. OF THE WIRE MARKER SLEEVE.

11 LACE HARNESS USING ITEM 35.

12 IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (FS-267).

13 SOLDER PER MIL-STD-440 USING ITEMS 31 AND 32.

14 Y OR N IN TINNED COLUMN INDICATES YES OR NO.

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PENNANT GENERAL NOTES

NOTE

15 A LETTER WITH AN ASTERISK SUFFIX INDICATES A LOWER CASE LETTER.

16 GRID MODULE IS 1 INCH.

17 UNLESS OTHERWISE SPECIFIED ---
FEATURE CENTERLINES ARE LOCATED WITHIN + OR - .25 INCH.
END OF HOOKUP WIRES OR ACCESSORIES ARE LOCATED WITHIN + OR - .12 INCH.

18 VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.

19 THE SUFFIX LETTER OF A CONDUCTOR IDENTIFICATION NUMBER INDICATES CONDUCTOR SHIELDING. COLOR. OR MARKING.
A - FROM END SHIELD
B - TO END SHIELD
E - GRAY
L - WHITE WITH BLUE TRACER
R - WHITE WITH RED TRACER
X - COAX OUTER CONDUCTOR

20 FASTEN MARKER SECURELY WITH ITEM 35. WRAP MARKER TO CONFORM TO CABLE CONFIGURATION

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PENNANT GENERAL NOTES

NOTE

TOLERANCE CHART. UNLESS OTHERWISE SPECIFIED ---

| APPLICABLE LENGTH FOR WIRE OR CABLE. STRIP WIRE. STRIP JACKET. CUT WIRE OR CUT SHIELD. | TOLERANCE | | | | |
|---|---|---|---|---|---|
| | WIRE OR CABLE | STRIP WIRE | STRIP JACKET | CUT WIRE | CUT SHIELD |
| UNDER 1 INCH | + .06-.00 | +.03-.00 | +.06-.06 | +.06-.06 | +.06-.06 |
| 1 INCH TO 6 INCHES | + .50-.00 | +.06-.00 | +.25-.25 | +.25-.25 | +.25-.25 |
| 6 INCHES TO 6 FEET | +1.00-.00 | | +.50-.50 | +.50-.50 | +.50-.50 |
| OVER 6 FEET | +2.00-.00 | | | | |

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PENNANT LIST OF MATERIALS

| NOTE | ITEM | QTY | PART NO | DESCRIPTION |
|---|---|---|---|---|
| | 1 | 1 | 1900096-004 | WIRE ND1002181 CLASS 4 WHITE JACKET TYPE 2 24AWG (WHT/RED. WHT/BLU) 73 FT TOTAL LENGTH |
| | 2 | 1 | 1900096-003 | WIRE ND1002181 CLASS 4 WHITE JACKET TYPE 1 24AWG (WHITE) 36 INCHES TOTAL LENGTH |
| | 3 | 1 | 1900096-002 | WIRE ND1002181 CLASS 1 TYPE 1 24AWG (WHITE) 680 FT TOTAL LENGTH |
| | 4 | 1 | 1900096-001 | WIRE ND1002181 CLASS 1 TYPE 1 22AWG (WHITE) 228 FT TOTAL LENGTH |
| 18 | 5 | 60 | 1000243-002 | FERRULE. ELECTRICAL CONDUCTOR INNER |
| 18 | 6 | 60 | 1000242-004 | FERRULE. ELECTRICAL CONDUCTOR OUTER |
| 18 | 7 | 25 | 1000243-006 | FERRULE. ELECTRICAL CONDUCTOR INNER |
| 18 | 8 | 25 | 1000242-005 | FERRULE. ELECTRICAL CONDUCTOR OUTER |
| | 9 | | | DELETED |
| | 10 | 110 | 1010490-198 | INSULATION SLEEVING. ELECTRICAL (HEAT SHRINK) |
| | 11 | 1 | 1010490-200 | INSULATION SLEEVING. ELECTRICAL (HEAT SHRINK) |
| | 13 | 6 | 1016006-002 | SPLICE REDUCER. PERMANENT. CRIMP STYLE. COPPER |
| 18 | 14 | 59 | 1015908- 21 | COAXIAL. SOCKET CONTACT |
| 18 | 15 | 59 | 1015908- 41 | COAXIAL. OUTER MALE BODY |
| 18 | 16 | 59 | 1015908- 51 | COAXIAL. HYRING |
| 18 | 17 | 232 | 1015818-424 | CONNECTOR SOCKET CONTACTS |

PENNANT LIST OF MATERIALS

| PENNANT NOTE | ITEM | QTY | PART NO | DESCRIPTION |
|---|---|---|---|---|
| 18 | 18 | 204 | 1015818-420 | CONNECTOR SOCKET CONTACTS |
| | 19 | 6 | 1010490-258 | INSULATION SLEEVING, ELECTRICAL (HEAT SHRINK) |
| 18 | 20 | 2 | 1015902- 46 | TERMINAL LUG |
| | 21 | 1 | MS3127E-24-61P | CONNECTOR, RECEP ELEC |
| | 22 | 1 | MS3127E-24-61PW | CONNECTOR, RECEP ELEC |
| | 23 | 1 | MS3127E-24-61PX | CONNECTOR, RECEP ELEC |
| 18 | 24 | 6 | 1015818-660 | CONNECTOR, PLUG ELEC |
| 18 | 25 | 2 | 1015867-560 | CONNECTOR, RECEP ELEC |
| 18 | 26 | 2 | 1015906-100 | CONNECTOR, RECEP ELEC |
| 18 | 27 | 2 | 1015906-101 | CONNECTOR, RECEP ELEC |
| 18 | 28 | 1 | 1015906-102 | CONNECTOR, RECEP ELEC |
| | 29 | 1 | 1900096-005 | WIRE-COAX MIL-C-17/69A RG188A/U 173 FT TOTAL LG |
| | 30 | 59 | 1010490-202 | INSULATION SLEEVING, ELECTRICAL (HEAT SHRINK) |
| | 31 | AR | QQ-S-571 | SOLDER SN60 (ES-2175 ALLOY 1) |
| | 32 | AR | QQ-S-571 | FLUX TYPE AR (ES-2175 TYPE 1 OR 2) OR<br>MIL-F-14256 FLUX (ES-2798) |
| 18 | 33 | 1 | 1015906-103 | CONNECTOR, RECEP. ELEC. |
| 18 | 34 | 1 | 1015906-104 | CONNECTOR, RECEP. ELEC. |

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
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PENNANT LIST OF MATERIALS

| PENNANT NOTE | ITEM | QTY | PART NO | DESCRIPTION |
|---|---|---|---|---|
| | 35 | 1 | MIL-T-713 | LACING TAPE TYPE P, CLASS 2, BLACK<br>(ES-2732 NO. 18) |
| | 36 | 1 | 1016128-001 | BAND IDENTIFICATION, BLANK |
| 18 | 37 | 21 | 1015864-109 | INSULATION SLEEVING |

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A 1900096
SCALE - NONE REV LTR R SHEET 9 OF 52

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| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO | FROM CIRCUIT POINT | FROM STRIP WIRE OR JACKET | FROM NO. | TO CIRCUIT POINT | TO STRIP WIRE OR JACKET | TO TERMINATION SPEC ITEM NO. | TO NO. |
|---|---|---|---|---|---|---|---|---|
| A 1 | 4 | J1-A | 19N | 1 | E1 | 29 | 20 | 17 |
| A 2 | 3 | J1-B | 19N | 1 | P6-56 | 19N | 17 | 15 |
| A 3 | 3 | J1-C | 19N | 1 | P6-54 | 19N | 17 | 15 |
| A 4 | 3 | J1-D | 19N | 1 | P6-55 | 19N | 17 | 15 |
| A 5 | 3 | J1-E | 19N | 1 | 56A- 1A | 25Y | | 32 |
| A 6 | 3 | J1-F | 19N | 1 | P7- 1 | 19N | 18 | 16 |
| A 7 | 3 | J1-G | 19N | 1 | P7- 2 | 19N | 18 | 16 |
| A 8 | 3 | J1-H | 19N | 1 | P7- 3 | 19N | 18 | 16 |
| A 9 | 3 | J1-J | 19N | 1 | P7- 4 | 19N | 18 | 16 |
| A 10 | 3 | J1-K | 19N | 1 | P7- 5 | 19N | 18 | 16 |
| A 11 | 3 | J1-L | 19N | 1 | P7- 6 | 19N | 18 | 16 |
| A 12 | 3 | J1-M | 19N | 1 | P7- 7 | 19N | 18 | 16 |
| A 13 | 3 | J1-N | 19N | 1 | P7- 8 | 19N | 18 | 16 |
| A 14 | 3 | J1-P | 19N | 1 | P7- 9 | 19N | 18 | 16 |
| A 15 | 3 | J1-R | 19N | 1 | P7-11 | 19N | 17 | 16 |
| A 16 | 3 | J1-S | 19N | 1 | P7-12 | 19N | 17 | 16 |
| A 17 | 3 | J1-T | 19N | 1 | P7-13 | 19N | 17 | 16 |
| A 18 | 3 | J1-U | 19N | 1 | P7-14 | 19N | 17 | 16 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A 1900096
SCALE - NONE REV LTR R SHEET 9 OF 52

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| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO | FROM CIRCUIT POINT | FROM STRIP WIRE OR JACKET | FROM NO. | TO CIRCUIT POINT | TO STRIP WIRE OR JACKET | TO TERMINATION SPEC ITEM NO. | TO NO |
|---|---|---|---|---|---|---|---|---|
| A 19 | 3 | J1-V | 19N | 1 | P7-15 | 19N | 17 | 16 |
| A 20 | 3 | J1-W | 19N | 1 | P7-16 | 19N | 17 | 16 |
| A 21 | 3 | J1-X | 19N | 1 | P7-17 | 19N | 17 | 16 |
| A 22 | 3 | J1-Y | 19N | 1 | P7-18 | 19N | 17 | 16 |
| A 23 | 3 | J1-Z | 19N | 1 | P7-19 | 19N | 17 | 16 |
| A 24 | 3 | J1-A* | 19N | 1 | P7-20 | 19N | 17 | 16 |
| A 25 | 3 | J1-B* | 19N | 1 | P7-21 | 19N | 17 | 16 |
| A 26 | 3 | J1-C* | 19N | 1 | P7-22 | 19N | 17 | 16 |
| A 27 | 3 | J1-D* | 19N | 1 | P7-23 | 19N | 17 | 16 |
| A 28 | 3 | J1-F* | 19N | 1 | P7-24 | 19N | 17 | 16 |
| A 29 | 3 | J1-F* | 19N | 1 | P7-25 | 19N | 17 | 16 |
| A 30 | 3 | J1-G* | 19N | 1 | P7-26 | 19N | 17 | 16 |
| A 31 | 3 | J1-H* | 19N | 1 | P7-27 | 19N | 17 | 16 |
| A 32 | 3 | J1-I* | 19N | 1 | P7-28 | 19N | 17 | 16 |
| A 33 | 3 | J1-J* | 19N | 1 | P7-29 | 19N | 18 | 16 |
| A 34 | 3 | J1-K* | 19N | 1 | P7-30 | 19N | 18 | 16 |
| A 35 | 3 | J1-M* | 19N | 1 | P7-31 | 19N | 18 | 16 |
| A 36 | 3 | J1-N* | 19N | 1 | P7-32 | 19N | 18 | 16 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A 1900096
SCALE - NONE REV LTR R SHEET 10 OF 52

GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T I N | TERMINATION SPEC ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T I N | TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 37 | 3 | J1-P* | 19N | | 1 | P7-33 | 19N | 18 | 16 |
| A 38 | 3 | J1-O* | 19N | | 1 | P7-34 | 19N | 18 | 16 |
| A 39 | 3 | J1-R* | 19N | | 1 | P7-35 | 19N | 18 | 16 |
| A 40 | 3 | J1-S* | 19N | | 1 | P7-36 | 19N | 18 | 16 |
| A 41 | 3 | J1-T* | 19N | | 1 | P7-37 | 19N | 18 | 16 |
| A 42 | 3 | J1-U* | 19N | | 1 | S7A- 1A | 25Y | | 31 |
| A 43 | 3 | J1-V* | 19N | | 1 | P6-51 | 19N | 17 | 15 |
| A 44 | 3 | J1-W* | 19N | | 1 | S11A- 1A | 25Y | | 28 |
| A 45 | 3 | J1-X* | 19N | | 1 | S11A- 3A | 25M | | 28 |
| A 46 | 3 | J1-Y* | 19N | | 1 | S11A- 5A | 25M | | 28 |
| A 47 | 3 | J1-BB | 19N | | 1 | P6-48 | 19N | 17 | 15 |
| A 48 | 3 | J1-AA | 19N | | 1 | P6-49 | 19N | 17 | 15 |
| A 49 | 3 | J1-Z* | 19N | | 1 | P6-50 | 19N | 17 | 15 |
| A 50 | 1 | | | A 10<br>7 8 | | | | A 10 | |
| A 50A | 4 | SHLD A50 | 25N | | | E27 | 25N | | 11 |
| A 50L | | J1-CC | 19N | | 1 | P6-16 | 19N | 17 | 15 |
| A 50R | | J1-DD | 19N | | 1 | P6-21 | 19N | 17 | 15 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE-NONE | REV LTR R | SHEET 11 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T I N | TERMINATION SPEC ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T I N | TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 51 | 3 | J2-B | 19N | | 2 | P2-61 | 19N | 18 | 41 |
| A 52 | 3 | J2-C | 19N | | 2 | P2-62 | 19N | 18 | 41 |
| A 53 | 3 | J2-D | 19N | | 2 | P2-52 | 19N | 18 | 41 |
| A 54 | 3 | J2-E | 19N | | 2 | P2-53 | 19N | 18 | 41 |
| A 55 | 3 | J2-F | 19N | | 2 | P2-54 | 19N | 18 | 41 |
| A 56 | 3 | J2-G | 19N | | 2 | P2-55 | 19N | 18 | 41 |
| A 57 | 3 | J2-H | 19N | | 2 | P2-56 | 19N | 18 | 41 |
| A 58 | 3 | J2-J | 19N | | 2 | P2-57 | 19N | 18 | 41 |
| A 59 | 3 | J2-K | 19N | | 2 | P2-58 | 19N | 18 | 41 |
| A 60 | 3 | J2-L | 19N | | 2 | P2-59 | 19N | 18 | 41 |
| A 61 | 3 | J2-M | 19N | | 2 | P2-60 | 19N | 18 | 41 |
| A 62 | 3 | J2-N | 19N | | 2 | J12-15 | 19N | 17 | 19 |
| A 63 | 3 | J2-P | 19N | | 2 | J12-10 | 19N | 18 | 19 |
| A 64 | 3 | J2-R | 19N | | 2 | P6-46 | 19N | 18 | 15 |
| A 65 | 3 | J2-S | 19N | | 2 | XF1- 1 | 25Y | | 21 |
| A 66 | 3 | J2-T | 19N | | 2 | P6-57 | 19N | 17 | 15 |
| A 67 | 3 | J2-U | 19N | | 2 | J12-29 | 19N | 18 | 19 |
| A 68 | 3 | J2-V | 19N | | 2 | J12-28 | 19N | 18 | 19 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE-NONE | REV LTR R | SHEET 12 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T I N | TERMINATION SPEC ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T I N | TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 69 | 3 | J2-W | 19N | | 2 | J12-27 | 19N | 18 | 19 |
| A 70 | 3 | J2-X | 19N | | 2 | J12-26 | 19N | 18 | 19 |
| A 71 | 3 | J2-Y | 19N | | 2 | J12-16 | 19N | 18 | 19 |
| A 72 | 3 | J2-Z | 19N | | 2 | J12-17 | 19N | 18 | 19 |
| A 73 | 3 | J2-A* | 19N | | 2 | J12-18 | 19N | 18 | 19 |
| A 74 | 3 | J2-B* | 19N | | 2 | J12-19 | 19N | 18 | 19 |
| A 75 | 3 | J2-C* | 19N | | 2 | J12-20 | 19N | 18 | 19 |
| A 76 | 3 | J2-D* | 19N | | 2 | J12-21 | 19N | 18 | 19 |
| A 77 | 3 | J2-E* | 19N | | 2 | J12-22 | 19N | 18 | 19 |
| A 78 | 3 | J2-F* | 19N | | 2 | J12-23 | 19N | 18 | 19 |
| A 79 | 3 | J2-G* | 19N | | 2 | J12-24 | 19N | 18 | 19 |
| A 80 | 3 | J2-H* | 19N | | 2 | J12-30 | 19N | 18 | 19 |
| A 81 | 3 | J2-I* | 19N | | 2 | J12-25 | 19N | 17 | 19 |
| A 82 | 3 | J2-M* | 19N | | 2 | P6-32 | 19N | 17 | 15 |
| A 83 | 3 | J2-N* | 19N | | 2 | P6-33 | 19N | 17 | 15 |
| A 84 | 3 | J2-P* | 19N | | 2 | P6-34 | 19N | 17 | 15 |
| A 85 | 3 | J2-Q* | 19N | | 2 | P6-35 | 19N | 17 | 15 |
| A 86 | 3 | J2-R* | 19N | | 2 | P6-36 | 19N | 17 | 15 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE-NONE | REV LTR R | SHEET 13 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T I N | TERMINATION SPEC ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T I N | TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 87 | 3 | J2-S* | 19N | | 2 | P6-37 | 19N | 17 | 15 |
| A 88 | 3 | J2-T* | 19N | | 2 | P6-38 | 19N | 17 | 15 |
| A 89 | 3 | J2-U* | 19N | | 2 | P6-39 | 19N | 17 | 15 |
| A 90 | 3 | J2-V* | 19N | | 2 | P6-40 | 19N | 17 | 15 |
| A 91 | 3 | J2-W* | 19N | | 2 | P6-41 | 19N | 17 | 15 |
| A 92 | 3 | J2-X* | 19N | | 2 | P6-42 | 19N | 17 | 15 |
| A 93 | 3 | J2-Y* | 19N | | 2 | J11-53 | 19N | 17 | 15 |
| A 94 | 3 | J2-Z* | 19N | | 2 | J11-59 | 19N | 17 | 15 |
| A 95 | 3 | J2-AA | 19N | | 2 | P6-45 | 19N | 17 | 15 |
| A 96 | 3 | J2-BB | 19N | | 2 | P6-29 | 19N | 17 | 15 |
| A 97 | 3 | J2-CC | 19N | | 2 | S13SW4-C | 25Y | | 27 |
| A 98 | 3 | J2-EE | 19N | | 2 | P6-31 | 19N | 17 | 15 |
| A 99 | 3 | J2-FF | 19N | | 2 | P6-30 | 19N | 17 | 15 |
| A 100 | 3 | J2-GG | 19N | | 2 | S13SW2-NC | 25Y | | 27 |
| A 101 | 3 | J2-GG | 19N | | 2 | J2-HH | 19N | | 2 |
| A 102 | 4 | J3-A | 19N | | 3 | E2 | 25N | | 18 |
| A 103 | 1 | | | A 10<br>7 8 | | | | A 10 | |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE-NONE | REV LTR R | SHEET 14 OF 52

GFL WIRING HARNESS A R 1900096

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | FROM TERMINATION SPEC. ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | TO TERMINATION SPEC ITEM NO. | NO |
|---|---|---|---|---|---|---|---|---|---|
| A 103A | 4 | SHLD A103 | 25N | | | E3 | 25N | | 12 |
| A 103L | | J3-B* | 19N | | 3 | S3A-10B | 25Y | | 39 |
| A 103R | | J3-B | 19N | | 3 | S3A-10A | 25Y | | 39 |
| A 104 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 104A | 4 | SHLD A104 | 25N | | | E3 | 25N | | 12 |
| A 104L | | J3-C* | 19N | | 3 | S3A- 6B | 25Y | | 39 |
| A 104R | | J3-C | 19N | | 3 | S3A- 6A | 25Y | | 39 |
| A 105 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 105A | 4 | SHLD A105 | 25N | | | E3 | 25N | | 17 |
| A 105L | | J3-D* | 19N | | 3 | S3A- 5B | 25Y | | 39 |
| A 105R | | J3-D | 19N | | 3 | S3A- 5A | 25Y | | 39 |
| A 106 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 106A | 4 | SHLD A106 | 25N | | | E3 | 25N | | 12 |
| A 106L | | J3-E* | 19N | | 3 | S3A- 4B | 25Y | | 39 |
| A 106R | | J3-E | 19N | | 3 | S3A- 4A | 25Y | | 39 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE - NONE | REV LTR R | SHEET 15 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | FROM TERMINATION SPEC. ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | TO TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 107 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 107A | 4 | SHLD A107 | 25N | | | E3 | 25N | | 12 |
| A 107L | | J3-F* | 19N | | 3 | S3A- 3B | 25Y | | 39 |
| A 107R | | J3-F | 19N | | 3 | S3A- 3A | 25Y | | 39 |
| A 108 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 108A | 4 | SHLD A108 | 25N | | | E3 | 25N | | 12 |
| A 108L | | J3-G* | 19N | | 3 | S3A- 2B | 25Y | | 39 |
| A 108R | | J3-G | 19N | | 3 | S3A- 2A | 25Y | | 39 |
| A 109 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 109A | 4 | SHLD A109 | 25N | | | E4 | 25N | | 13 |
| A 109L | | J3-H* | 19N | | 3 | P6-14 | 19N | 17 | 15 |
| A 109R | | J3-H | 19N | | 3 | P6-13 | 19N | 17 | 15 |
| A 110 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 110A | 4 | SHLD A110 | 25N | | | E4 | 25N | | 13 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE - NONE | REV LTR R | SHEET 16 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | FROM TERMINATION SPEC. ITEM NO | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | TO TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 110L | | J3-J* | 19N | | 3 | S1A- 6B | 25Y | | 38 |
| A 110R | | J3-J | 19N | | 3 | S1A- 6A | 25Y | | 38 |
| A 111 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 111A | 4 | SHLD A111 | 25N | | | E4 | 25N | | 13 |
| A 111L | | J3-K* | 19N | | 3 | S2B- 5B | 25Y | | 30 |
| A 111R | | J3-K | 19N | | 3 | S2B- 5A | 25Y | | 30 |
| A 112 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 112A | 4 | SHLD A112 | 25N | | | E4 | 25N | | 13 |
| A 112L | | J3-M* | 19N | | 3 | S8A- 5B | 25Y | | 29 |
| A 112R | | J3-M | 19N | | 3 | S8A- 5A | 25Y | | 29 |
| A 113 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 113A | 4 | SHLD A113 | 25N | | | E4 | 25N | | 13 |
| A 113L | | J3-N* | 19N | | 3 | S1A- 1B | 25Y | | 38 |
| A 113R | | J3-N | 19N | | 3 | S1A- 1A | 25Y | | 38 |
| A 114 | 1 | | | A 10 | | | | A 10 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE - NONE | REV LTR R | SHEET 17 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | FROM TERMINATION SPEC. ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | TO TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 7 8 | | | | | |
| A 114A | 4 | SHLD A114 | 25N | | | E5 | 25N | | 14 |
| A 114L | | J3-P* | 19N | | 3 | S1A- 3B | 25Y | | 38 |
| A 114R | | J3-P | 19N | | 3 | S1A- 3A | 25Y | | 38 |
| A 115 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 115A | 4 | SHLD A115 | 25N | | | E5 | 25N | | 14 |
| A 115L | | J3-R* | 19N | | 3 | S8A- 4B | 25Y | | 29 |
| A 115R | | J3-R | 19N | | 3 | S8A- 4A | 25Y | | 29 |
| A 116 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 116A | 4 | SHLD A116 | 25N | | | E5 | 25N | | 14 |
| A 116L | | J3-S* | 19N | | 3 | S2B- 4B | 25Y | | 30 |
| A 116R | | J3-S | 19N | | 3 | S2B- 4A | 25Y | | 30 |
| A 117 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 117A | 4 | SHLD A117 | 25N | | | E5 | 25N | | 14 |
| A 117L | | J3-T* | 19N | | 3 | S1A- 4B | 25Y | | 38 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE - NONE | REV LTR R | SHEET 18 OF 52

GFL WIRING HARNESS A R 1900096

| CONDUCTOR INDIVIDUAL LENGTH | | FROM | | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T N | TERMINATION SPEC 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TERMINATION SPEC 1 ITEM NO. | NO |
| A 117R | | J3-T | 29N | | | 3 | S1A- 4A | 25Y | | 38 |
| A 118 | 1 | | | | A 10 | | | | A 10 | |
| | | | | | 7 8 | | | | | |
| A 118A | 4 | SHLD A118 | 25N | | | | E5 | 25N | | 14 |
| A 118L | | J3-U* | 19N | | | 3 | S1A- 5P | 25Y | | 38 |
| A 118R | | J3-U | 19N | | | 3 | S1A- 5A | 25Y | | 38 |
| A 119 | 3 | J3-AA | 19N | | | 3 | S2A- 1A | 25Y | | 30 |
| A 120 | 3 | J3-BB | 19N | | | 3 | S2A- 3A | 25Y | | 30 |
| A 121 | 3 | J3-CC | 19N | | | 3 | S2A- 2A | 25Y | | 30 |
| A 122 | 3 | J3-DD | 19N | | | 3 | S2A- 1B | 25Y | | 30 |
| A 123 | 3 | J3-EE | 19N | | | 3 | S2A- 3B | 25Y | | 30 |
| A 124 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 124B | 3 | P5-66 | 19N | | 18 | 43 | SHLD A124 | 25N | | |
| A 124E | | J4-A1 | 13N | | 14 | 4 | P5-15 | 19N | 18 | 43 |
| A 124X | | J4-A2 | | 28 | | 4 | SHLD A124 | | | |
| A 125 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE - NONE | REV LTR R | SHEET 19 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR INDIVIDUAL LENGTH | | FROM | | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T N | TERMINATION SPEC 1 ITEM NO. | NO | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TERMINATION SPEC 1 ITEM NO. | NO |
| A 125B | 3 | P5-64 | 19N | | 18 | 43 | SHLD A125 | 25N | | |
| A 125E | | J4-B1 | 13N | | 14 | 4 | P5-13 | 19N | 18 | 43 |
| A 125X | | J4-B2 | | 28 | | 4 | SHLD A125 | | | |
| A 126 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 126B | 3 | P5-62 | 19N | | 18 | 43 | SHLD A126 | 25N | | |
| A 126E | | J4-C1 | 13N | | 14 | 4 | P5- 9 | 19N | 18 | 43 |
| A 126X | | J4-C2 | | 28 | | 4 | SHLD A126 | | | |
| A 127 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 127B | 3 | P5-58 | 19N | | 18 | 43 | SHLD A127 | 25N | | |
| A 127E | | J4-D1 | 13N | | 14 | 4 | P5- 7 | 19N | 18 | 43 |
| A 127X | | J4-D2 | | 28 | | 4 | SHLD A127 | | | |
| A 128 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 128B | 3 | P5-60 | 19N | | 18 | 43 | SHLD A128 | 25N | | |
| A 128E | | J4-E1 | 13N | | 14 | 4 | P5- 5 | 19N | 18 | 43 |
| A 128X | | J4-E2 | | 28 | | 4 | SHLD A128 | | | |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE - NONE | REV LTR R | SHEET 20 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR INDIVIDUAL LENGTH | | FROM | | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T N | TERMINATION SPEC 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TERMINATION SPEC 1 ITEM NO. | NO |
| A 129 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 129B | 3 | P5-50 | 19N | | 18 | 43 | SHLD A129 | 25N | | |
| A 129E | | J4-F1 | 13N | | 14 | 4 | P5- 3 | 19N | 18 | 43 |
| A 129X | | J4-F2 | | 28 | | 4 | SHLD A129 | | | |
| A 130 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 130B | 3 | P5-52 | 19N | | 18 | 43 | SHLD A130 | 25N | | |
| A 130E | | J4-G1 | 13N | | 14 | 4 | P5- 1 | 19N | 19 | 43 |
| A 130X | | J4-G2 | | 28 | | 4 | SHLD A130 | | | |
| A 131 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 131B | 3 | P5-22 | 19N | | 18 | 43 | SHLD A131 | 25N | | |
| A 131E | | J4-K1 | 13N | | 14 | 4 | XF2- 1 | 25Y | | 23 |
| A 131X | | J4-K2 | | 28 | | 4 | SHLD A131 | | | |
| A 132 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 132B | 3 | P5-14 | 19N | | 18 | 43 | SHLD A132 | 25N | | |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE - NONE | REV LTR R | SHEET 21 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR INDIVIDUAL LENGTH | | FROM | | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T N | TERMINATION SPEC 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 132E | | J4-J1 | 13N | | 14 | 4 | P5-63 | 19N | 18 | 43 |
| A 132X | | J4-J2 | | 28 | | 4 | SHLD A132 | | | |
| A 133 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 133B | 3 | P1-62 | 19N | | 18 | 40 | SHLD A133 | 25N | | |
| A 133E | | J5-A1 | 13N | | 14 | 5 | P1-25 | 19N | 18 | 40 |
| A 133X | | J5-A2 | | 28 | | 5 | SHLD A133 | | | |
| A 134 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 134B | 3 | P1-64 | 19N | | 18 | 40 | SHLD A134 | 25N | | |
| A 134E | | J5-B1 | 13N | | 14 | 5 | P1-23 | 19N | 18 | 40 |
| A 134X | | J5-B2 | | 28 | | 5 | SHLD A134 | | | |
| A 135 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 135B | 3 | P1-66 | 19N | | 18 | 40 | SHLD A135 | 25N | | |
| A 135E | | J5-C1 | 13N | | 14 | 5 | P1-21 | 19N | 18 | 40 |
| A 135X | | J5-C2 | | 28 | | 5 | SHLD A135 | | | |
| A 136 | 29 | | 56N | | A 30 | | | | A 10 | |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE NONE | REV LTR R | SHEET 22 OF 52

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T N 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 15 16 | | | | 5 6 | |
| A 136B | 3 | P1-56 | 19N | | 18 | 40 | SHLD A136 | 25N | | |
| A 136E | | J5-D1 | 13N | | 14 | 5 | P1-19 | 19N | 18 | 40 |
| A 136X | | J5-D2 | | 28 | | 5 | SHLD A136 | | | |
| A 137 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 137B | 3 | P1-58 | 19N | | 18 | 40 | SHLD A137 | 25N | | |
| A 137E | | J5-E1 | 13N | | 14 | 5 | P1-17 | 19N | 18 | 40 |
| A 137X | | J5-E2 | | 28 | | 5 | SHLD A137 | | | |
| A 138 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 138B | 3 | P1-60 | 19N | | 18 | 40 | SHLD A138 | 25N | | |
| A 138E | | J5-F1 | 13N | | 14 | 5 | P1-13 | 19N | 18 | 40 |
| A 138X | | J5-F2 | | 28 | | 5 | SHLD A138 | | | |
| A 139 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 139B | 3 | P1-52 | 19N | | 18 | 40 | SHLD A139 | 25N | | |
| A 139E | | J5-G1 | 13N | | 14 | 5 | P1-11 | 19N | 18 | 40 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE - NONE | REV LTR R | SHEET 23 OF 52

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| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T N 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|
| A 139X | | J5-G2 | | 28 | | 5 | SHLD A139 | | | |
| A 140 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 140B | 3 | P1-53 | 19N | | 18 | 40 | SHLD A140 | 25N | | |
| A 140E | | J5-H1 | 13N | | 14 | 5 | P1- 9 | 19N | 18 | 40 |
| A 140X | | J5-H2 | | 28 | | 5 | SHLD A140 | | | |
| A 141 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 141B | 3 | P1-54 | 19N | | 18 | 40 | SHLD A141 | 25N | | |
| A 141E | | J5-J1 | 13N | | 14 | 5 | P1- 7 | 19N | 18 | 40 |
| A 141X | | J5-J2 | | 28 | | 5 | SHLD A141 | | | |
| A 142 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 142B | 3 | P1-43 | 19N | | 18 | 40 | SHLD A142 | 25N | | |
| A 142E | | J6-A1 | 13N | | 14 | 6 | P1- 5 | 19N | 18 | 40 |
| A 142X | | J6-A2 | | 28 | | 6 | SHLD A142 | | | |
| A 143 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE - NONE | REV LTR R | SHEET 24 OF 52

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| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T N 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|
| A 143B | 3 | P1-44 | 19N | | 18 | 40 | SHLD A143 | 25N | | |
| A 143E | | J6-B1 | 13N | | 14 | 6 | P1- 3 | 19N | 18 | 40 |
| A 143X | | J6-B2 | | 28 | | 6 | SHLD A143 | | | |
| A 144 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 144B | 3 | P1-24 | 19N | | 18 | 40 | SHLD A144 | 25N | | |
| A 144E | | J6-C1 | 13N | | 14 | 6 | P1- 1 | 19N | 18 | 40 |
| A 144X | | J6-C2 | | 28 | | 6 | SHLD A144 | | | |
| A 145 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 145B | 3 | P1-22 | 19N | | 18 | 40 | SHLD A145 | 25N | | |
| A 145E | | J6-D1 | 13N | | 14 | 6 | P1-61 | 19N | 18 | 40 |
| A 145X | | J6-D2 | | 28 | | 6 | SHLD A145 | | | |
| A 146 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 146B | 3 | P1-20 | 19N | | 18 | 40 | SHLD A146 | 25N | | |
| A 146E | | J6-E1 | 13N | | 14 | 6 | P1-63 | 19N | 18 | 40 |
| A 146X | | J6-E2 | | 28 | | 6 | SHLD A146 | | | |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE - NONE | REV LTR R | SHEET 25 OF 52

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| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T N 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|
| A 147 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 147B | 3 | P1-18 | 19N | | 18 | 40 | SHLD A147 | 25N | | |
| A 147E | | J6-F1 | 13N | | 14 | 6 | P1-65 | 19N | 18 | 40 |
| A 147X | | J6-F2 | | 28 | | 6 | SHLD A147 | | | |
| A 148 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 148B | 3 | P1-16 | 19N | | 18 | 40 | SHLD A148 | 25N | | |
| A 148E | | J6-G1 | 13N | | 14 | 6 | P1-55 | 19N | 18 | 40 |
| A 148X | | J6-G2 | | 28 | | 6 | SHLD A148 | | | |
| A 149 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 149B | 3 | P1-14 | 19N | | 18 | 40 | SHLD A149 | 25N | | |
| A 149E | | J6-H1 | 13N | | 14 | 6 | P1-57 | 19N | 18 | 40 |
| A 149X | | J6-H2 | | 28 | | 6 | SHLD A149 | | | |
| A 150 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 150B | 3 | P6- 3 | 19N | | 18 | 15 | SHLD A150 | 25N | | |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE - NONE | REV LTR R | SHEET 26 OF 52

GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO | INDIVIDUAL LENGTH 2 | FROM CIRCUIT POINT | 2 | T N | 2 | TERMINATION SPEC 1 ITEM NO | NO. | TO CIRCUIT POINT | 2 | T N | 2 | TERMINATION SPEC 1 ITEM NO. | NO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 150E | | | J7-A1 | 13N | | | 14 | 7 | P6- 4 | 19N | | | 18 | 15 |
| A 150X | | | J7-A2 | | | 28 | | 7 | SHLD A150 | | | | | |
| A 151 | 29 | | | 56N | | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 151B | 3 | | P2-36 | 19N | | | 17 | 41 | SHLD A151 | 25N | | | | |
| A 151E | | | J7-B1 | 13N | | | 14 | 7 | P2-51 | 19N | | | 18 | 41 |
| A 151X | | | J7-B2 | | | 28 | | 7 | SHLD A151 | | | | | |
| A 152 | 29 | | | 56 | | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 152B | 3 | | P2-26 | 19N | | | 17 | 41 | SHLD A152 | 25N | | | | |
| A 152E | | | J7-C1 | 13N | | | 14 | 7 | P2-49 | 19N | | | 18 | 41 |
| A 152X | | | J7-C2 | | | 28 | | 7 | SHLD A152 | | | | | |
| A 153 | 29 | | | 56N | | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 153B | 3 | | P2-28 | 19N | | | 17 | 41 | SHLD A153 | 25N | | | | |
| A 153E | | | J7-D1 | 13N | | | 14 | 7 | P2-48 | 19N | | | 18 | 41 |
| A 153X | | | J7-D2 | | | 28 | | 7 | SHLD A153 | | | | | |
| A 154 | 29 | | | 56N | | | A 30 | | | | | | A 10 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE-NONE | REV LTR R | SHEET 27 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO | INDIVIDUAL LENGTH 2 | FROM CIRCUIT POINT | 2 | T N | 2 | TERMINATION SPEC 1 ITEM NO | NO. | TO CIRCUIT POINT | 2 | T N | 2 | TERMINATION SPEC 1 ITEM NO. | NO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 154B | 3 | | P2-30 | 19N | | | 17 | 41 | SHLD A154 | 25N | | | | |
| A 154E | | | J7-E1 | 13N | | | 14 | 7 | P2-44 | 19N | | | 18 | 41 |
| A 154X | | | J7-E2 | | | 28 | | 7 | SHLD A154 | | | | | |
| A 155 | 29 | | | 56N | | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 155B | 3 | | P2-20 | 19N | | | 17 | 41 | SHLD A155 | 25N | | | | |
| A 155E | | | J7-F1 | 13N | | | 14 | 7 | P2-43 | 19N | | | 18 | 41 |
| A 155X | | | J7-F2 | | | 28 | | 7 | SHLD A155 | | | | | |
| A 156 | 29 | | | | | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 156B | 3 | | P2-22 | 19N | | | 17 | 41 | SHLD A156 | 25N | | | | |
| A 156E | | | J7-G1 | 13N | | | 14 | 7 | P2-39 | 19N | | | 18 | 41 |
| A 156X | | | J7-G2 | | | 28 | | 7 | SHLD A156 | | | | | |
| A 157 | 29 | | | 56N | | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 157B | 3 | | P2-23 | 19N | | | 17 | 41 | SHLD A157 | 25N | | | | |
| A 157E | | | J7-H1 | 13N | | | 14 | 7 | P2- 6 | 19N | | | 18 | 41 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE-NONE | REV LTR R | SHEET 28 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO | INDIVIDUAL LENGTH 2 | FROM CIRCUIT POINT | 2 | T N | 2 | TERMINATION SPEC 1 ITEM NO | NO. | TO CIRCUIT POINT | 2 | T N | 2 | TERMINATION SPEC 1 ITEM NO. | NO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 157X | | | J7-H2 | | | 28 | | 7 | SHLD A157 | | | | | |
| A 158 | 29 | | | 56N | | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 158B | 3 | | P2-24 | 19N | | | 17 | 41 | SHLD A158 | 25N | | | | |
| A 158E | | | J7-J1 | 13N | | | 14 | 7 | P2- 5 | 19N | | | 18 | 41 |
| A 158X | | | J7-J2 | | | 28 | | 7 | SHLD A158 | | | | | |
| A 159 | 29 | | | 56N | | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 159B | 3 | | P2-13 | 19N | | | 17 | 41 | SHLD A159 | 25N | | | | |
| A 159E | | | J8-A1 | 13N | | | 14 | 8 | P2- 4 | 19N | | | 18 | 41 |
| A 159X | | | J8-A2 | | | 28 | | 8 | SHLD A159 | | | | | |
| A 160 | 29 | | | 56 | | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 160B | 3 | | P2-14 | 19N | | | 17 | 41 | SHLD A160 | 25N | | | | |
| A 160E | | | J8-B1 | 13N | | | 14 | 8 | P2- 3 | 19N | | | 18 | 41 |
| A 160X | | | J8-B2 | | | 28 | | 8 | SHLD A160 | | | | | |
| A 161 | 29 | | | 56N | | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE-NONE | REV LTR R | SHEET 29 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO | INDIVIDUAL LENGTH 2 | FROM CIRCUIT POINT | 2 | T N | 2 | TERMINATION SPEC 1 ITEM NO | NO. | TO CIRCUIT POINT | 2 | T N | 2 | TERMINATION SPEC 1 ITEM NO. | NO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 161B | 3 | | P2-15 | 19N | | | 17 | 41 | SHLD A161 | 25N | | | | |
| A 161E | | | J8-C1 | 13N | | | 14 | 8 | P2- 2 | 19N | | | 18 | 41 |
| A 161X | | | J8-C2 | | | 28 | | 8 | SHLD A161 | | | | | |
| A 162 | 29 | | | 56N | | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 162B | 3 | | P2-50 | 19N | | | 17 | 41 | SHLD A162 | 25N | | | | |
| A 162E | | | J8-D1 | 13N | | | 14 | 8 | P2- 1 | 19N | | | 18 | 41 |
| A 162X | | | J8-D2 | | | 28 | | 8 | SHLD A162 | | | | | |
| A 163 | 29 | | | 56N | | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 163B | 3 | | P2-47 | 19N | | | 17 | 41 | SHLD A163 | 25N | | | | |
| A 163E | | | J8-E1 | 13N | | | 14 | 8 | P2-35 | 19N | | | 18 | 41 |
| A 163X | | | J8-E2 | | | 28 | | 8 | SHLD A163 | | | | | |
| A 164 | 29 | | | 56N | | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 164B | 3 | | P2-46 | 19N | | | 17 | 41 | SHLD A164 | 25N | | | | |
| A 164E | | | J8-F1 | 13N | | | 14 | 8 | P2-25 | 19N | | | 18 | 41 |
| A 164X | | | J8-F2 | | | 28 | | 8 | SHLD A164 | | | | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE-NONE | REV LTR R | SHEET 30 OF 52

GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | STRIP WIRE OR JACKET | CUT WIRE OR SHIELD | TERMINATION SPEC ITEM NO. | NO. | TO CIRCUIT POINT | STRIP WIRE OR JACKET | TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|
| A 165 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 165B | 3 | P2-45 | 19N | | 17 | 41 | SHLD A165 | 25N | | |
| A 165E | | J8-G1 | 13N | | 14 | 8 | P2-27 | 19N | 18 | 41 |
| A 165X | | J8-G2 | | 28 | | 8 | SHLD A165 | | | |
| A 166 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 166B | 3 | P2-42 | 19N | | 17 | 41 | SHLD A166 | 25N | | |
| A 166E | | J8-H1 | 13N | | 14 | 8 | P2-29 | 19N | 18 | 41 |
| A 166X | | J8-H2 | | 28 | | 8 | SHLD A166 | | | |
| A 167 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 167B | 3 | P2-41 | 19N | | 17 | 41 | SHLD A167 | 25N | | |
| A 167E | | J8-J1 | 13N | | 14 | 8 | P2-19 | 19N | 18 | 41 |
| A 167X | | J8-J2 | | 28 | | 8 | SHLD A167 | | | |
| A 168 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 168B | 3 | P6- 7 | 19N | | 18 | 15 | SHLD A168 | 25N | | |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE - NONE | REV LTR R | SHEET 31 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | STRIP WIRE OR JACKET | CUT WIRE OR SHIELD | TERMINATION SPEC ITEM NO. | NO. | TO CIRCUIT POINT | STRIP WIRE OR JACKET | TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|
| A 168E | | J9-A1 | 13N | | 14 | 9 | P6- 8 | 19N | 18 | 15 |
| A 168X | | J9-A2 | | 28 | | 9 | SHLD A168 | | | |
| A 169 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 169B | 3 | P6-10 | 19N | | 18 | 15 | SHLD A169 | 25N | | |
| A 169E | | J9-B1 | 13N | | 14 | 9 | P6- 9 | 19N | 18 | 15 |
| A 169X | | J9-B2 | | 28 | | 9 | SHLD A169 | | | |
| A 170 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 170B | 3 | P5-12 | 19N | | 18 | 43 | SHLD A170 | 25N | | |
| A 170E | | J9-C1 | 13N | | 14 | 9 | P5-61 | 19N | 18 | 43 |
| A 170X | | J9-C2 | | 28 | | 9 | SHLD A170 | | | |
| A 171 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 171B | 3 | P5-11 | 19N | | 18 | 43 | SHLD A171 | 25N | | |
| A 171E | | J9-D1 | 13N | | 14 | 9 | P5-55 | 19N | 18 | 43 |
| A 171X | | J9-D2 | | 28 | | 9 | SHLD A171 | | | |
| A 172 | 29 | | 56 | | A 30 | | | | A 10 | |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE - NONE | REV LTR R | SHEET 32 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | STRIP WIRE OR JACKET | CUT WIRE OR SHIELD | TERMINATION SPEC ITEM NO. | NO. | TO CIRCUIT POINT | STRIP WIRE OR JACKET | TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 15 16 | | | | 5 6 | |
| A 172B | 3 | P5- 8 | 19N | | 18 | 43 | SHLD A172 | 25N | | |
| A 172E | | J9-E1 | 13N | | 14 | 9 | P5-57 | 19N | 18 | 43 |
| A 172X | | J9-E2 | | 28 | | 9 | SHLD A172 | | | |
| A 173 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 173B | 3 | P5- 6 | 19N | | 18 | 43 | SHLD A173 | 25N | | |
| A 173E | | J9-F1 | 13N | | 14 | 9 | P5-59 | 19N | 18 | 43 |
| A 173X | | J9-F2 | | 28 | | 9 | SHLD A173 | | | |
| A 174 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 174B | 3 | P5- 4 | 19N | | 18 | 43 | SHLD A174 | 25N | | |
| A 174E | | J9-G1 | 13N | | 14 | 9 | P5-49 | 19N | 18 | 43 |
| A 174X | | J9-G2 | | 28 | | 9 | SHLD A174 | | | |
| A 175 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 175B | 3 | P5- 2 | 19N | | 18 | 43 | SHLD A175 | 25N | | |
| A 175E | | J9-H1 | 13N | | 14 | 9 | P5-51 | 19N | 18 | 43 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON TEXAS | SIZE A | 1900096
SCALE - NONE | REV LTR R | SHEET 33 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | STRIP WIRE OR JACKET | CUT WIRE OR SHIELD | TERMINATION SPEC ITEM NO. | NO. | TO CIRCUIT POINT | STRIP WIRE OR JACKET | TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|
| A 175X | | J9-H2 | | 28 | | 9 | SHLD A175 | | | |
| A 176 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 176B | 3 | P3-11 | 19N | | 18 | 42 | SHLD A176 | 25N | | |
| A 176E | | J10-A1 | 13N | | 14 | 10 | P3-58 | 19N | 18 | 42 |
| A 176X | | J10-A2 | | 28 | | 10 | SHLD A176 | | | |
| A 177 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 177B | 3 | P3- 9 | 19N | | 18 | 42 | SHLD A177 | 25N | | |
| A 177E | | J10-B1 | 13N | | 14 | 10 | P3-50 | 19N | 18 | 42 |
| A 177X | | J10-B2 | | 28 | | 10 | SHLD A177 | | | |
| A 178 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 178B | 3 | P3- 7 | 19N | | 18 | 42 | SHLD A178 | 25N | | |
| A 178E | | J10-C1 | 13N | | 14 | 10 | P3-52 | 19N | 18 | 42 |
| A 178X | | J10-C2 | | 28 | | 10 | SHLD A178 | | | |
| A 179 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE - NONE | REV LTR R | SHEET 34 OF 52

GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | T/N | 2 | FROM TERMINATION SPEC. ITEM NO. | NO. | TO CIRCUIT POINT | T/N | TO TERMINATION SPEC ITEM NO. | NO |
|---|---|---|---|---|---|---|---|---|---|---|
| A 179B | 3 | P3- 3 | 19N | | 18 | 42 | SHLD A179 | 25N | | |
| A 179E | | J10-D1 | 13N | | 14 | 10 | P3-54 | 19N | 18 | 42 |
| A 179X | | J10-D2 | | 28 | | 10 | SHLD A179 | | | |
| A 180 | 29 | | 36N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 180B | 3 | P3- 3 | 19N | | 18 | 42 | SHLD A180 | 25N | | |
| A 180E | | J10-E1 | 13N | | 14 | 10 | P3-44 | 19N | 18 | 42 |
| A 180X | | J10-E2 | | 28 | | 10 | SHLD A180 | | | |
| A 181 | 29 | | 36N | | A 30 | | | | A 10 | |
| | | | | | 19 16 | | | | 5 6 | |
| A 181B | 3 | P3- 1 | 19N | | 17 | 42 | SHLD A181 | 25N | | |
| A 181E | | J10-F1 | 13N | | 14 | 10 | P3-46 | 19N | 17 | 42 |
| A 181X | | J10-F2 | | 28 | | 10 | SHLD A181 | | | |
| A 182 | 3 | J11- 1 | 19N | | 17 | 20 | P1-25 | 19N | | 40 |
| A 183 | 3 | J11- 2 | 19N | | 17 | 20 | P3-24 | 19N | 17 | 42 |
| A 184 | 3 | J11- 3 | 19N | | 17 | 20 | P2-51 | 19N | | 41 |
| A 185 | 3 | J11- 4 | 19N | | 17 | 20 | P1-23 | 19N | | 40 |
| A 186 | 3 | J11- 5 | 19N | | 17 | 20 | P3-22 | 19N | 17 | 42 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE - NONE | REV LTR R | SHEET 35 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | T/N | FROM TERMINATION SPEC. ITEM NO. | NO. | TO CIRCUIT POINT | T/N | TO TERMINATION SPEC ITEM NO | NO |
|---|---|---|---|---|---|---|---|---|---|
| A 187 | 3 | J11- 6 | 19N | 17 | 20 | P2-49 | 19N | | 41 |
| A 188 | 3 | J11- 7 | 19N | 17 | 20 | P1-21 | 19N | | 40 |
| A 189 | 3 | J11- 8 | 19N | 17 | 20 | P3-20 | 19N | 17 | 42 |
| A 190 | 3 | J11- 9 | 19N | 17 | 20 | P2-48 | 19N | | 41 |
| A 191 | 3 | J11-10 | 19N | 17 | 20 | P1-19 | 19N | | 40 |
| A 192 | 3 | J11-11 | 19N | 17 | 20 | P3-18 | 19N | 17 | 42 |
| A 193 | 3 | J11-12 | 19N | 17 | 20 | P2-46 | 19N | | 41 |
| A 194 | 3 | J11-13 | 19N | 17 | 20 | P1-17 | 19N | | 40 |
| A 195 | 3 | J11-14 | 19N | 17 | 20 | P3-16 | 19N | 17 | 42 |
| A 196 | 3 | J11-15 | 19N | 17 | 20 | P2-43 | 19N | | 41 |
| A 197 | 3 | J11-16 | 19N | 17 | 20 | P1-13 | 19N | | 40 |
| A 198 | 3 | J11-17 | 19N | 17 | 20 | P3-14 | 19N | 17 | 42 |
| A 199 | 3 | J11-18 | 19N | 17 | 20 | P2-39 | 19N | | 41 |
| A 200 | 3 | J11-19 | 19N | 17 | 20 | P1-11 | 19N | | 40 |
| A 201 | 3 | J11-20 | 19N | 17 | 20 | P3-12 | 19N | 17 | 42 |
| A 202 | 3 | J11-21 | 19N | 17 | 20 | P2- 6 | 19N | | 41 |
| A 203 | 3 | J11-22 | 19N | 17 | 20 | P1- 9 | 19N | | 40 |
| A 204 | 3 | J11-23 | 19N | 17 | 20 | P3-10 | 19N | 17 | 42 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE - NONE | REV LTR R | SHEET 36 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | T/N | FROM TERMINATION SPEC. ITEM NO. | NO. | TO CIRCUIT POINT | T/N | TO TERMINATION SPEC ITEM NO. | NO |
|---|---|---|---|---|---|---|---|---|---|
| A 205 | 3 | J11-24 | 19N | 17 | 20 | P2- 5 | 19N | | 41 |
| A 206 | 3 | J11-25 | 19N | 17 | 20 | P1- 7 | 19N | | 40 |
| A 207 | 3 | J11-26 | 19N | 17 | 20 | P3- 8 | 19N | 17 | 42 |
| A 208 | 3 | J11-27 | 19N | 17 | 20 | P2- 4 | 19N | | 41 |
| A 209 | 3 | J11-28 | 19N | 17 | 20 | P1- 5 | 19N | | 40 |
| A 210 | 3 | J11-29 | 19N | 17 | 20 | P3- 6 | 19N | 17 | 42 |
| A 211 | 3 | J11-30 | 19N | 17 | 20 | P2- 3 | 19N | | 41 |
| A 212 | 3 | J11-31 | 19N | 17 | 20 | P1- 3 | 19N | | 40 |
| A 213 | 3 | J11-32 | 19N | 17 | 20 | P3- 4 | 19N | 17 | 42 |
| A 214 | 3 | J11-33 | 19N | 17 | 20 | P2- 2 | 19N | | 41 |
| A 215 | 3 | J11-34 | 19N | 17 | 20 | P1- 1 | 19N | | 40 |
| A 216 | 3 | J11-35 | 19N | 17 | 20 | P3- 2 | 19N | 17 | 42 |
| A 217 | 3 | J11-36 | 19N | 17 | 20 | P2- 1 | 19N | | 41 |
| A 218 | 3 | J11-37 | 19N | 17 | 20 | P1-61 | 19N | | 40 |
| A 219 | 3 | J11-38 | 19N | 17 | 20 | P3-61 | 19N | 17 | 42 |
| A 220 | 3 | J11-39 | 19N | 17 | 20 | P2-35 | 19N | | 41 |
| A 221 | | DELETED | | | | | | | |
| A 222 | 3 | J15-P | 25Y | 37 | 45 | P3-67 | 19N | 17 | 42 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | T/N | FROM TERMINATION SPEC. ITEM NO. | NO. | TO CIRCUIT POINT | T/N | TO TERMINATION SPEC ITEM NO. | NO |
|---|---|---|---|---|---|---|---|---|---|
| A 223 | | DELETED | | | | | | | |
| A 224 | 3 | J11-43 | 19N | 17 | 20 | P1-65 | 19N | | 40 |
| A 225 | 3 | J11-44 | 19N | 17 | 20 | P3-64 | 19N | 17 | 42 |
| A 226 | 3 | J11-45 | 19N | 17 | 20 | P2-27 | 19N | | 41 |
| A 227 | 3 | J11-46 | 19N | 17 | 20 | P1-59 | 19N | | 40 |
| A 228 | 3 | J11-47 | 19N | 17 | 20 | P3-66 | 19N | 17 | 42 |
| A 229 | 3 | J11-48 | 19N | 17 | 20 | P2-29 | 19N | | 41 |
| A 230 | 3 | J11-49 | 19N | 17 | 20 | P1-57 | 19N | | 40 |
| A 231 | 3 | J11-50 | 19N | 17 | 20 | P3-56 | 19N | 17 | 42 |
| A 232 | 3 | J11-51 | 19N | 17 | 20 | P2-19 | 19N | | 41 |
| A 236 | 3 | J12- 1 | 19N | 17 | 19 | P2-52 | 19N | 18 | 41 |
| A 237 | 3 | J12- 2 | 19N | 17 | 19 | P2-53 | 19N | 18 | 41 |
| A 238 | 3 | J12- 3 | 19N | 17 | 19 | P2-54 | 19N | 18 | 41 |
| A 239 | 3 | J12- 4 | 19N | 17 | 19 | P2-55 | 19N | 18 | 41 |
| A 240 | 3 | J12- 5 | 19N | 17 | 19 | P2-56 | 19N | 18 | 41 |
| A 241 | 3 | J12- 6 | 19N | 17 | 19 | P2-57 | 19N | 18 | 41 |
| A 242 | 3 | J12- 7 | 19N | 17 | 19 | P2-58 | 19N | 18 | 41 |
| A 243 | 3 | J12- 8 | 19N | 17 | 19 | P2-59 | 19N | 18 | 41 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR INDIVIDUAL LENGTH | | FROM | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | TERMINATION SPEC. ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | TERMINATION SPEC ITEM NO. | NO |
| A 244 | 3 | J12- 9 | 19N | 17 | 19 | P2-60 | 19N | 18 | 41 |
| A 245 | 3 | J12-10 | 19N | 18 | 19 | P7-38 | 19N | 17 | 16 |
| A 246 | 3 | J12-11 | 19N | 18 | 19 | P2-61 | 19N | 18 | 41 |
| A 247 | 3 | J12-11 | 19N | 18 | 19 | S2A- 1A | 25Y | | 30 |
| A 248 | 3 | J12-12 | 19N | 18 | 19 | P2-62 | 19N | 18 | 41 |
| A 249 | 3 | J12-12 | 19N | 18 | 19 | S2A- 3A | 25Y | | 30 |
| A 250 | 3 | J12-16 | 19N | 18 | 19 | P3-48 | 19N | 18 | 42 |
| A 251 | 3 | J12-17 | 19N | 18 | 19 | P3-37 | 19N | 18 | 42 |
| A 252 | 3 | J12-18 | 19N | 18 | 19 | P3-38 | 19N | 18 | 42 |
| A 253 | 3 | J12-19 | 19N | 18 | 19 | P3-39 | 19N | 18 | 42 |
| A 254 | 3 | J12-20 | 19N | 18 | 19 | P3-40 | 19N | 18 | 42 |
| A 255 | 3 | J12-21 | 19N | 18 | 19 | P3-41 | 19N | 18 | 42 |
| A 256 | 3 | J12-22 | 19N | 18 | 19 | P3-42 | 19N | 18 | 42 |
| A 257 | 3 | J12-23 | 19N | 18 | 19 | P3-32 | 19N | 18 | 42 |
| A 258 | 3 | J12-24 | 19N | 18 | 19 | P3-33 | 19N | 18 | 42 |
| A 259 | 3 | J12-26 | 19N | 18 | 19 | P3-34 | 19N | 17 | 42 |
| A 260 | 3 | J12-27 | 19N | 18 | 19 | P3-31 | 19N | 17 | 42 |
| A 261 | 3 | J12-28 | 19N | 18 | 19 | P5-40 | 19N | 17 | 43 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR INDIVIDUAL LENGTH | | FROM | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | TERMINATION SPEC ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | TERMINATION SPEC ITEM NO. | NO. |
| A 262 | 3 | J12-29 | 19N | 18 | 19 | P5-18 | 19N | 17 | 43 |
| A 263 | 3 | J12-30 | 19N | 18 | 19 | P7-10 | 19N | 17 | 16 |
| A 264 | 3 | P1-14 | 19N | | 40 | P3-15 | 19N | 17 | 42 |
| A 265 | 3 | P1-16 | 19N | | 40 | P3-17 | 19N | 17 | 42 |
| A 266 | 3 | P1-18 | 19N | 18 | 40 | P3-19 | 19N | 17 | 42 |
| A 267 | 3 | J15-X | 25Y | | 45 | P3-21 | 19N | 17 | 42 |
| A 268 | 3 | P1-22 | 19N | | 40 | P3-23 | 19N | 17 | 42 |
| A 269 | 3 | P1-24 | 19N | | 40 | P3-25 | 19N | 17 | 42 |
| A 270 | 3 | P1-43 | 19N | | 40 | P3-45 | 19N | 17 | 42 |
| A 271 | 3 | P1-44 | 19N | | 40 | P3-47 | 19N | 17 | 42 |
| A 272 | 1 | | | A 10 | | | | A 10 | |
| | | | | | | | | 7 8 | |
| A 272B | 4 | E27 | 25N | | 11 | SHLD A272 | 25N | | |
| A 272L | | P1-15 | 19N | 17 | 40 | K1- 7 | 25Y | 37 | 44 |
| A 272R | | P1-50 | 19N | 17 | 40 | K1- 4 | 25Y | 37 | 44 |
| A 273 | 3 | P1-52 | 19N | | 40 | P3-51 | 19N | 17 | 42 |
| A 274 | 3 | P1-53 | 19N | | 40 | P3-53 | 19N | 17 | 42 |
| A 275 | 3 | P1-54 | 19N | | 40 | P3-43 | 19N | 17 | 42 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR INDIVIDUAL LENGTH | | FROM | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | TERMINATION SPEC. ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | TERMINATION SPEC ITEM NO. | NO. |
| A 276 | 3 | P1-56 | 19N | | 40 | P3-57 | 19N | 17 | 42 |
| A 277 | | P1-58 | 19N | | 40 | P3-59 | 19N | 17 | 42 |
| A 278 | | P1-60 | 19N | | 40 | P3-49 | 19N | 17 | 42 |
| A 279 | 3 | P1-62 | 19N | | 40 | P3-63 | 19N | 17 | 42 |
| A 280 | 3 | P1-64 | 19N | | 40 | P3-65 | 19N | 17 | 42 |
| A 281 | 3 | P1-66 | 19N | | 40 | P3-55 | 19N | 17 | 42 |
| A 282 | | DELETED | | | | | | | |
| A 283 | 1 | | | A 10 | | | | A 10 | |
| | | | | | | | | 7 8 | |
| A 283B | 3 | E27 | 25N | | 11 | SHLD A283 | 25N | | |
| A 283L | | P2-40 | 19N | 17 | 41 | K1-13 | 25Y | 37 | 44 |
| A 283R | | P2-21 | 19N | 17 | 41 | K1-10 | 25Y | 37 | 44 |
| A 284 | 3 | P3-13 | 19N | 17 | 42 | P6-19 | 19N | 17 | 15 |
| A 285 | 3 | P3-26 | 19N | 17 | 42 | S10SW2-NC | 25Y | | 26 |
| A 286 | 3 | P3-32 | 19N | 18 | 42 | P5-38 | 19N | 17 | 43 |
| A 287 | 3 | P3-33 | 19N | 18 | 42 | P5-39 | 19N | 17 | 43 |
| A 288 | 3 | P3-37 | 19N | 18 | 42 | P5-44 | 19N | 17 | 43 |
| A 289 | 3 | P3-38 | 19N | 18 | 42 | P5-45 | 19N | 17 | 43 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR INDIVIDUAL LENGTH | | FROM | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | TERMINATION SPEC. ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | TERMINATION SPEC ITEM NO | NO. |
| A 290 | 3 | P3-39 | 19N | 18 | 42 | P5-46 | 19N | 17 | 43 |
| A 291 | 3 | P3-40 | 19N | 18 | 42 | P5-47 | 19N | 17 | 43 |
| A 292 | 3 | P3-41 | 19N | 18 | 42 | P5-48 | 19N | 17 | 43 |
| A 293 | 3 | P3-42 | 19N | 18 | 42 | P5-37 | 19N | 17 | 43 |
| A 294 | 3 | P3-48 | 19N | 18 | 42 | P5-43 | 19N | 17 | 43 |
| A 296 | | P3-60 | 19N | 17 | 42 | P6-17 | 19N | 17 | 15 |
| A 297 | 3 | P5-17 | 19N | 17 | 43 | S10SW2-NO | 25Y | | 26 |
| A 298 | 1 | | | A 10 | | | | A 10 | |
| | | | | | | | | 7 8 | |
| A 298B | 4 | E27 | 25N | | 11 | SHLD A298 | 25N | | |
| A 298L | | P5-10 | 19N | 17 | 43 | P6-20 | 19N | 17 | 15 |
| A 298R | | P5-56 | 19N | 17 | 43 | P6-18 | 19N | 17 | 15 |
| A 299 | 2 | | | 11 | | | | 5 6 10 | |
| A 299B | 4 | E28 | 25N | | 33 | SHLD A299 | 25N | | |
| A 299W | | P5-53 | 19N | 17 | 43 | XF2- 2 | 25Y | | 24 |
| A 300 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 300A | 4 | SHLD A300 | 25N | | | E27 | 25N | | 11 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR INDIVIDUAL LENGTH |  | FROM |  |  |  | TO |  |  |  |
|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT 2 | T/N 2 | TERMINATION SPEC 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT 2 | T/N 2 | TERMINATION SPEC 1 ITEM NO | NO |
| A 300L |  | P6-12 | 19N | 17 | 15 | S3A-11B | 25Y |  | 39 |
| A 300R |  | P6-11 | 19N | 17 | 15 | S3A-11A | 25Y |  | 39 |
| A 301 | 3 | P6-15 | 19N | 17 | 15 | S10SW1-NO | 25Y |  | 26 |
| A 302 | 3 | P6-22 | 19N | 17 | 15 | S13SW3-NO | 25Y |  | 27 |
| A 303 | 3 | P6-23 | 19N | 17 | 15 | S12SW1-NO | 25Y |  | 25 |
| A 304 | 3 | P6-24 | 19N | 17 | 15 | S12SW1-NC | 25Y |  | 25 |
| A 305 | 3 | P6-25 | 19N | 17 | 15 | S12SW1-C | 25Y |  | 25 |
| A 306 | 3 | P6-26 | 19N | 17 | 15 | XDS6-A | 25Y |  | 25 |
| A 307 | 3 | P6-27 | 19N | 17 | 15 | S9SW1-NO | 25Y |  | 25 |
| A 308 | 3 | P6-28 | 19N | 18 | 15 | S9SW1-C | 25Y |  | 25 |
| A 309 | 3 | P6-46 | 19N | 18 | 15 | S10SW2-C | 25Y |  | 26 |
| A 310 | 3 | P6-47 | 19N | 17 | 15 | S2A-5B | 25Y |  | 30 |
| A 311 | 3 | P6-52 | 19N | 17 | 15 | S7A-11A | 25Y |  | 31 |
| A 312 | 3 | P6-53 | 19N | 17 | 15 | S6A-11A | 25Y |  | 32 |
| A 313 | 3 | P6-58 | 19N | 17 | 15 | S5SW1-NC | 25Y |  | 36 |
| A 314 | 3 | P7- 1 | 19N | 18 | 16 | S6A- 2A | 25Y |  | 32 |
| A 315 | 3 | P7- 2 | 19N | 18 | 16 | S6A- 3A | 25Y |  | 32 |
| A 316 | 3 | P7- 3 | 19N | 18 | 16 | S6A- 4A | 25Y |  | 32 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR INDIVIDUAL LENGTH |  | FROM |  |  |  | TO |  |  |  |
|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT 2 | T/N 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT 2 | T/N 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 317 | 3 | P7- 4 | 19N | 18 | 16 | S6A- 5A | 25Y |  | 32 |
| A 318 | 3 | P7- 5 | 19N | 18 | 16 | S6A- 6A | 25Y |  | 32 |
| A 319 | 3 | P7- 6 | 19N | 18 | 16 | S6A- 7A | 25Y |  | 32 |
| A 320 | 3 | P7- 7 | 19N | 18 | 16 | S6A- 8A | 25Y |  | 32 |
| A 321 | 3 | P7- 8 | 19N | 18 | 16 | S6A- 9A | 25Y |  | 32 |
| A 322 | 3 | P7- 9 | 19N | 18 | 16 | S6A-10A | 25Y |  | 32 |
| A 323 | 3 | P7-29 | 19N | 17 | 16 | S7A-10A | 25Y |  | 31 |
| A 324 | 3 | P7-30 | 19N | 17 | 16 | S7A- 9A | 25Y |  | 31 |
| A 325 | 3 | P7-31 | 19N | 17 | 16 | S7A- 8A | 25Y |  | 31 |
| A 326 | 3 | P7-32 | 19N | 17 | 16 | S7A- 7A | 25Y |  | 31 |
| A 327 | 3 | P7-33 | 19N | 17 | 16 | S7A- 6A | 25Y |  | 31 |
| A 328 | 3 | P7-34 | 19N | 17 | 16 | S7A- 5A | 25Y |  | 31 |
| A 329 | 3 | P7-35 | 19N | 17 | 16 | S7A- 4A | 25Y |  | 31 |
| A 330 | 3 | P7-36 | 19N | 17 | 16 | S7A- 3A | 25Y |  | 31 |
| A 331 | 3 | P7-37 | 19N | 17 | 16 | S7A- 2A | 25Y |  | 31 |
| A 332 | 1 |  |  | A 10 |  |  |  | A 10 |  |
|  |  |  |  |  |  |  |  | 7 8 |  |
| A 332B | 4 | E28 | 25N |  | 33 | SHLD A332 | 25N |  |  |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

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| CONDUCTOR INDIVIDUAL LENGTH |  | FROM |  |  |  | TO |  |  |  |
|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT 2 | T/N 2 | TERMINATION SPEC. 1 ITEM NO | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT 2 | T/N 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 332L |  | S1A- 1B | 25Y |  | 38 | S2B- 1B | 25Y |  | 30 |
| A 332R |  | S1A- 1A | 25Y |  | 38 | S2B- 1A | 25Y |  | 30 |
| A 333 | 1 |  |  | A 10 |  |  |  | A 10 |  |
|  |  |  |  |  |  |  |  | 7 8 |  |
| A 333A | 4 | E28 | 25N |  | 33 | SHLD A333 | 25N |  |  |
| A 333L |  | S1A- 3B | 25Y |  | 38 | S2B- 3B | 25Y |  | 30 |
| A 333R |  | S1A- 3A | 25Y |  | 38 | S2B- 3A | 25Y |  | 30 |
| A 334 | 3 | S11B- 6A | 25Y |  | 28 | S10SW2-C | 25Y |  | 26 |
| A 335 | 1 |  |  | A 10 |  |  |  | A 10 |  |
|  |  |  |  | 7 8 |  |  |  |  |  |
| A 335A | 4 | SHLD A335 | 25N |  |  | E28 | 25N |  | 33 |
| A 335L |  | S2B- 1B | 25Y |  | 30 | S8A- 1B | 25Y |  | 29 |
| A 335R |  | S2B- 1A | 25Y |  | 30 | S8A- 1A | 25Y |  | 29 |
| A 336 | 1 |  |  | A 10 |  |  |  | A 10 |  |
|  |  |  |  | 7 8 |  |  |  |  |  |
| A 336A | 4 | SHLD A336 | 25N |  |  | E28 | 25N |  | 33 |
| A 336L |  | S2B- 3B | 25Y |  | 30 | S8A- 3B | 25Y |  | 29 |
| A 336R |  | S2B- 3A | 25Y |  | 30 | S8A- 3A | 25Y |  | 29 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

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| CONDUCTOR INDIVIDUAL LENGTH |  | FROM |  |  |  | TO |  |  |  |
|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT 2 | T/N 2 | TERMINATION SPEC. 1 ITEM NO | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT 2 | T/N 2 | TERMINATION SPEC 1 ITEM NO. | NO |
| A 337 | 3 | S4SW1-C | 25Y |  | 37 | S4SW2-C | 25Y |  | 37 |
| A 338 | 3 | S13SW2-C | 25Y |  | 27 | S13SW1-C | 25Y |  | 27 |
| A 339 | 3 | S4SW1-NO | 25Y |  | 37 | XDS2-A | 25Y |  | 37 |
| A 340 | 3 | S4SW2-NO | 25Y |  | 37 | S5SW1-C | 25Y |  | 36 |
| A 341 | 3 | S5SW1-C | 25Y |  | 36 | S5SW2-C | 25Y |  | 36 |
| A 342 | 3 | S5SW2-NC | 25Y |  | 36 | XDS3-A | 25Y |  | 36 |
| A 343 | 3 | S6A- 1A | 25Y |  | 32 | XDS1-10 | 25Y |  | 35 |
| A 344 | 3 | S6A- 2A | 25Y |  | 32 | XDS1- 1 | 25Y |  | 35 |
| A 345 | 3 | S6A- 3A | 25Y |  | 32 | XDS1- 2 | 25Y |  | 35 |
| A 346 | 3 | S6A- 4A | 25Y |  | 32 | XDS1- 3 | 25Y |  | 35 |
| A 347 | 3 | S6A- 5A | 25Y |  | 32 | XDS1- 4 | 25Y |  | 35 |
| A 348 | 3 | S6A- 6A | 25Y |  | 32 | XDS1- 5 | 25Y |  | 35 |
| A 349 | 3 | S6A- 7A | 25Y |  | 32 | XDS1- 6 | 25Y |  | 35 |
| A 350 | 3 | S6A- 8A | 25Y |  | 32 | XDS1- 7 | 25Y |  | 35 |
| A 351 | 3 | S6A- 9A | 25Y |  | 32 | XDS1- 8 | 25Y |  | 35 |
| A 352 | 3 | S6A-10A | 25Y |  | 32 | XDS1- 9 | 25Y |  | 35 |
| A 353 | 3 | S7A- 1A | 25Y |  | 31 | XDS1-20 | 25Y |  | 35 |
| A 354 | 3 | S7A- 2A | 25Y |  | 31 | XDS1-11 | 25Y |  | 35 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

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| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | FROM CIRCUIT POINT | STRIP WIRE OR JACKET 2 | T/N | CUT WIRE OR SHIELD 2 | TERMINATION SPEC 1 ITEM NO. | NO. | TO CIRCUIT POINT | STRIP WIRE OR JACKET 2 | T/N | CUT WIRE OR SHIELD 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 355 | 3 | | S7A- 3A | 25 | Y | | | 31 | XDS1-12 | 25 | Y | | | 35 |
| A 356 | 3 | | S7A- 4A | 25 | Y | | | 31 | XDS1-13 | 25 | Y | | | 35 |
| A 357 | 3 | | S7A- 5A | 25 | Y | | | 31 | XDS1-14 | 25 | Y | | | 35 |
| A 358 | 3 | | S7A- 6A | 25 | Y | | | 31 | XDS1-15 | 25 | Y | | | 35 |
| A 359 | 3 | | S7A- 7A | 25 | Y | | | 31 | XDS1-16 | 25 | Y | | | 35 |
| A 360 | 3 | | S7A- 8A | 25 | Y | | | 31 | XDS1-17 | 25 | Y | | | 35 |
| A 361 | 3 | | S7A- 9A | 25 | Y | | | 31 | XDS1-18 | 25 | Y | | | 35 |
| A 362 | 3 | | S7A-10A | 25 | Y | | | 31 | XDS1-19 | 25 | Y | | | 35 |
| A 363 | 3 | | S9SW2-C | 25 | Y | | | 25 | S4SW2-C | 25 | Y | | | 37 |
| A 364 | 3 | | S9SW2-C | 25 | Y | | | 25 | S10SW1-C | 25 | Y | | | 26 |
| A 365 | 3 | | S9SW2-NO | 25 | Y | | | 25 | S12SW1-C | 25 | Y | | | 25 |
| A 366 | 3 | | S9SW2-NO | 25 | Y | | | 25 | XDS4-A | 25 | Y | | | 25 |
| A 367 | 3 | | S10SW1-C | 25 | Y | | | 26 | S11- 6A | 25 | Y | | | 28 |
| A 368 | 3 | | S10SW1-NO | 25 | Y | | | 26 | XDS5-A | 25 | Y | | | 26 |
| A 369 | 3 | | S10SW1-NC | 25 | Y | | | 26 | XDS5-B | 25 | Y | | | 26 |
| A 370 | 3 | | S4SW1-C | 25 | Y | | | 37 | XF1- 2 | 25 | Y | | | 22 |
| A 371 | 3 | | XF1- 2 | 25 | Y | | | 22 | XDS7-B | 25 | Y | | | 27 |
| A 372 | 3 | | S13SW2-C | 25 | Y | | | 27 | S13SW3-C | 25 | Y | | | 27 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE - NONE | REV LTR S | SHEET 47 OF 52

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GFL WIRING HARNESS A S 1900096

| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | FROM CIRCUIT POINT | STRIP WIRE OR JACKET 2 | T/N | CUT WIRE OR SHIELD 2 | TERMINATION SPEC 1 ITEM NO. | NO. | TO CIRCUIT POINT | STRIP WIRE OR JACKET 2 | T/N | CUT WIRE OR SHIELD 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 373 | 3 | | S13SW1-NO | 25 | Y | | | 27 | XDS7-G | 25 | Y | | | 27 |
| A 374 | 3 | | XDS1-G | 25 | Y | | 20 | 34 | XDS2-G | 25 | Y | | | 37 |
| A 375 | 3 | | XDS1-G | 25 | Y | | | 34 | XDS5-G | 25 | Y | | | 26 |
| A 376 | 3 | | XDS2-A | 25 | Y | | | 37 | XDS2-C | 25 | Y | | | 37 |
| A 377 | 3 | | XDS2-G | 25 | Y | | | 37 | XDS3-G | 25 | Y | | | 36 |
| A 378 | 3 | | XDS3-A | 25 | Y | | | 36 | XDS3-C | 25 | Y | | | 36 |
| A 379 | 3 | | XDS3-G | 25 | Y | | | 36 | XDS4-G | 25 | Y | | | 29 |
| A 380 | 3 | | XDS4-A | 25 | Y | | | 25 | XDS4-C | 25 | Y | | | 25 |
| A 381 | 3 | | XDS4-G | 25 | Y | | | 25 | XDS6-G | 25 | Y | | | 25 |
| A 382 | 3 | | XDS5-A | 25 | Y | | | 26 | XDS5-D | 25 | Y | | | 26 |
| A 383 | 3 | | XDS5-B | 25 | Y | | | 26 | XDS5-C | 25 | Y | | | 26 |
| A 384 | 3 | | XDS5-G | 25 | Y | | | 26 | S13SW3-C | 25 | Y | | | 27 |
| A 385 | 3 | | XDS6-A | 25 | Y | | | 25 | XDS6-C | 25 | Y | | | 25 |
| A 386 | 3 | | XDS6-G | 25 | Y | | | 25 | P6-57 | 19 | N | | 18 | 15 |
| A 387 | 3 | | XDS7-B | 25 | Y | | | 27 | XDS7-C | 25 | Y | | | 27 |
| A 388 | 4 | | E3 | 25 | N | | | 12 | E2 | 25 | N | | | 18 |
| A 389 | 4 | | E4 | 25 | N | | | 13 | E2 | 25 | N | | | 18 |
| A 390 | 4 | | E5 | 25 | N | | | 14 | E2 | 25 | N | | | 18 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE - NONE | REV LTR S | SHEET 48 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | FROM CIRCUIT POINT | STRIP WIRE OR JACKET 2 | T/N | CUT WIRE OR SHIELD 2 | TERMINATION SPEC 1 ITEM NO. | NO. | TO CIRCUIT POINT | STRIP WIRE OR JACKET 2 | T/N | CUT WIRE OR SHIELD 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 412 | 4 | | E27 | 25 | N | | | 11 | E2 | 25 | N | | | 18 |
| A 413 | 4 | | E28 | 25 | N | | | 33 | E2 | 25 | N | | | 18 |
| A 418 | 4 | | P6-59 | 19 | N | | | 15 | E27 | 25 | N | | | 11 |
| A 419 | 3 | | S2A-2A | 25 | Y | | | 30 | S2A-4A | 25 | Y | | | 30 |
| A 420 | 29 | | | | | | A 30 | | | | | | A 10 | |
| | | | | | | | 15 16 | | | | | | 5 6 | |
| A 420B | 3 | | P5-16 | 19 | N | | 18 | 43 | SHLD A420 | 25 | N | | | |
| A 420E | | | J4-H1 | 13 | N | | 14 | 4 | P5-65 | 19 | N | | 18 | 43 |
| A 420X | | | J4-H2 | | | 28 | | 4 | SHLD A420 | | | | | |
| A 421 | 3 | | S11B-3A | 25 | Y | | | 28 | P2-63 | 19 | N | | 17 | 41 |
| A 422 | 3 | | S11B-5A | 25 | Y | | | 28 | S2A-5A | 25 | Y | | | 30 |
| A 423 | 3 | | P7-39 | 19 | N | | 17 | 16 | J11-52 | 19 | N | | 17 | 20 |
| A 424 | 3 | | P7-40 | 19 | N | | 17 | 16 | J11-54 | 19 | N | | 17 | 20 |
| A 425 | 3 | | P6-43 | 19 | N | | 17 | 15 | J11-55 | 19 | N | | 17 | 20 |
| A 426 | 3 | | P7-41 | 19 | N | | 17 | 16 | J11-56 | 19 | N | | 17 | 20 |
| A 427 | 3 | | P7-42 | 19 | N | | 17 | 16 | J11-57 | 19 | N | | 17 | 20 |
| A 428 | 3 | | P6-44 | 19 | N | | 17 | 15 | J11-58 | 19 | N | | 17 | 20 |
| A 429 | 3 | | S1A-2A | 25 | Y | | | 38 | S1A-2B | 25 | Y | | | 38 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE - NONE | REV LTR R | SHEET 49 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | FROM CIRCUIT POINT | STRIP WIRE OR JACKET 2 | T/N | CUT WIRE OR SHIELD 2 | TERMINATION SPEC 1 ITEM NO. | NO. | TO CIRCUIT POINT | STRIP WIRE OR JACKET 2 | T/N | CUT WIRE OR SHIELD 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 430 | 3 | | S2B-2A | 25 | Y | | | 30 | S2B-2B | 25 | Y | | | 30 |
| A 431 | 3 | | S8A-2A | 25 | Y | | | 29 | S8A-2B | 25 | Y | | | 29 |
| A 432 | 3 | | P3-30 | 19 | N | | 17 | 42 | S10SW3-NC | 25 | Y | | | 26 |
| A 433 | 3 | | P5-24 | 19 | N | | 17 | 43 | S10SW3-NO | 25 | Y | | | 26 |
| A 434 | 3 | | S10SW2-C | 19 | N | | | 2 | S10SW3-C | 25 | Y | | | 26 |
| A 435 | 3 | | S13SW4-NC | 25 | Y | | | 27 | P6-28 | 19 | N | | 17 | 15 |
| A 436 | 3 | | S9SW2-NO | 25 | Y | | | 25 | XDS7-A | 25 | Y | | | 27 |
| A 437 | 3 | | XDS7-A | 25 | Y | | | 27 | XDS7-D | 25 | Y | | | 27 |
| A 438 | 3 | | K1- 3 | 25 | Y | | 37 | 44 | J14-B | 25 | Y | | | 45 |
| A 439 | 3 | | K1- 5 | 25 | Y | | 37 | 44 | P6- 1 | 19 | N | | 17 | 15 |
| A 440 | 3 | | K1- 6 | 25 | Y | | 37 | 44 | K1-12 | 25 | Y | | | 44 |
| A 441 | 3 | | K1- 8 | 25 | Y | | 37 | 44 | P6- 2 | 19 | N | | 17 | 15 |
| A 442 | 3 | | K1- 9 | 25 | Y | | 37 | 44 | J15-A | 25 | Y | | | 45 |
| A 443 | 3 | | K1-11 | 25 | Y | | 37 | 44 | P6- 5 | 19 | N | | 17 | 15 |
| A 444 | 3 | | K1-12 | 25 | Y | | 37 | 44 | J15-X | 25 | Y | | | 45 |
| A 445 | 3 | | K1-14 | 25 | Y | | 37 | 44 | P6- 6 | 19 | N | | 17 | 15 |
| A 446 | 3 | | K1-15 | 25 | Y | | 37 | 44 | J15-W | 25 | Y | | 37 | 45 |
| A 447 | 3 | | K1-16 | 25 | Y | | 37 | 44 | J3-X | 19 | N | | | 3 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 T/N | TERMINATION SPEC 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 T/N | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|
| A 448 | 3 | | K1-18 | 25Y | 37 | 44 | J15-Y | 25Y | 37 | 45 |
| A 449 | 3 | | K1-19 | 25Y | 37 | 44 | J3-Z | 19N | | 3 |
| A 450 | 3 | | K1- 1 | 25Y | 37 | 44 | S11A-6A | 25Y | | 28 |
| A 451 | 3 | | K1- 2 | 25Y | 37 | 44 | P3-29 | 19N | 17 | 42 |
| A 452 | 3 | | S135W2-C | 25Y | | 27 | P3-28 | 19N | 17 | 42 |
| A 453 | 3 | | J3-Y | 19N | | 3 | K1- 6 | 25Y | | 44 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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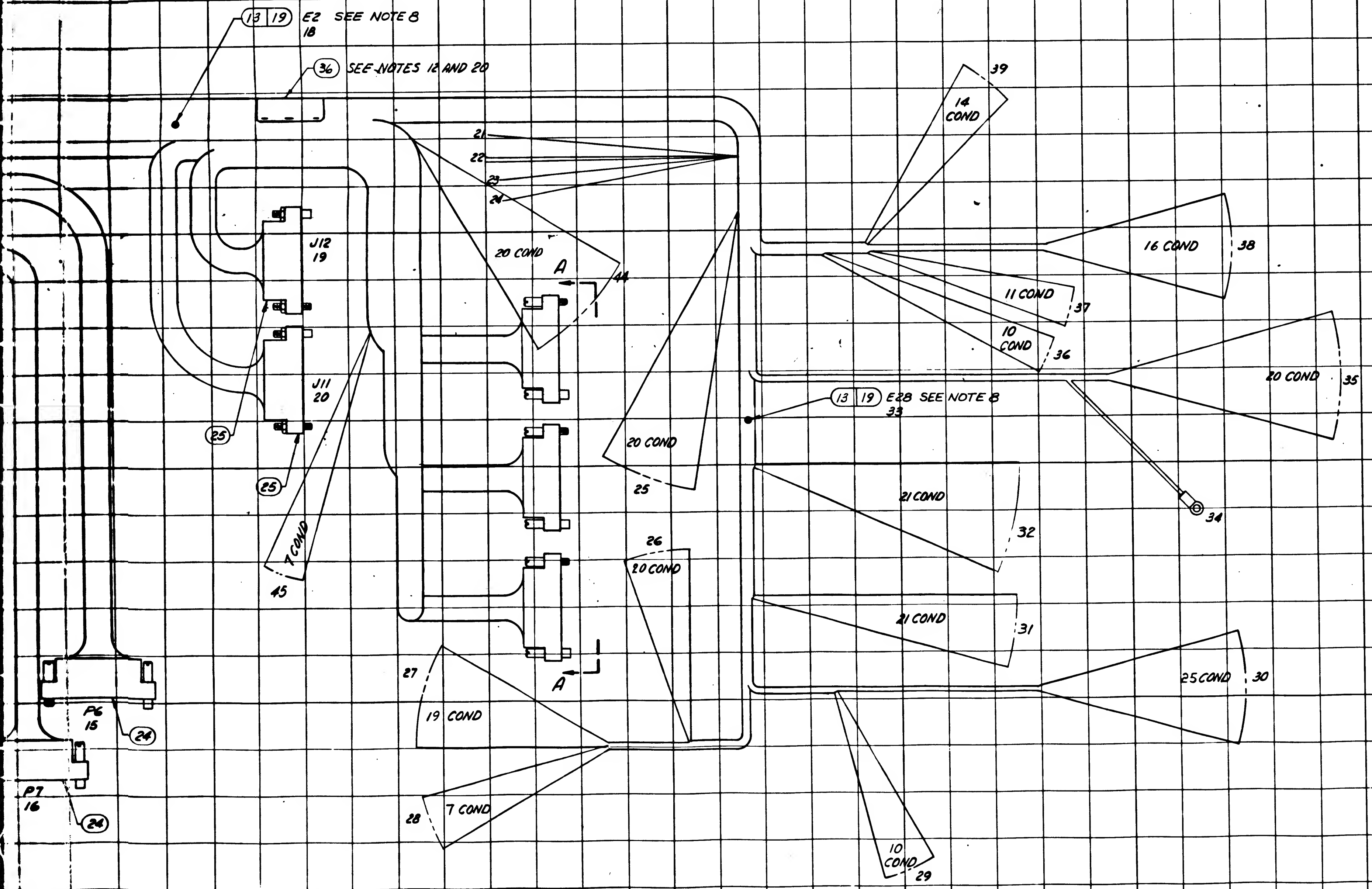
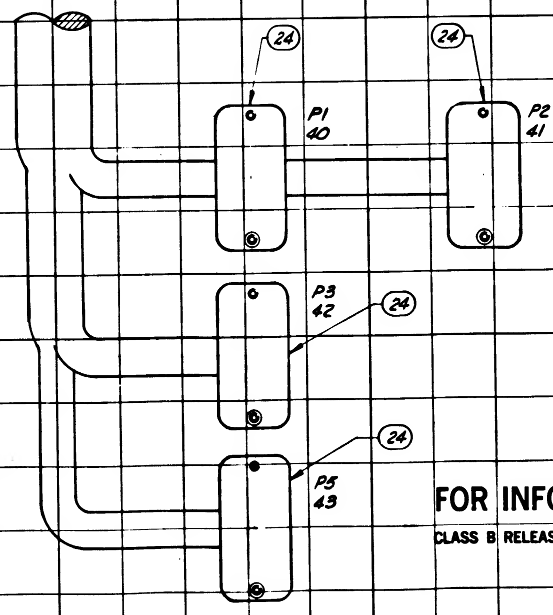
SCALE - NONE REV LTR R SHEET 51 OF 52

## REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
|---|---|---|---|---|---|
| H | | THIS SHEET ADDED PER TDRK 04869 | | 03 | |

FOR ADDITIONAL REVISION RECORD SEE SHEET 1





PARTIAL VIEW AA

FOR INFORMATION ONLY
CLASS B RELEASE TDR No. 01801 DATE 2 July 63

| | |
|---|---|
| UNLESS OTHERWISE SPECIFIED | DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ± |
| DO NOT SCALE THIS DRAWING | |
| MATERIAL | — |
| CONTRACT | NAS 9-497 |
| NEXT ASSY | 1900057-011 |
| USED ON | 1900057-011 |
| APPLICATION | |

AC SPARK PLUG DIVISION, GMC
MILWAUKEE WISCONSIN

| | |
|---|---|
| ACSP PN | |
| DRAWN | 8 OCT 63 |
| CHECKED | 10 OCT 63 |
| APPROVAL | 15 OCT 63 |
| APPROVAL | |
| NASA APPROVAL | 12-3-63 |
| MIT APPROVAL | |

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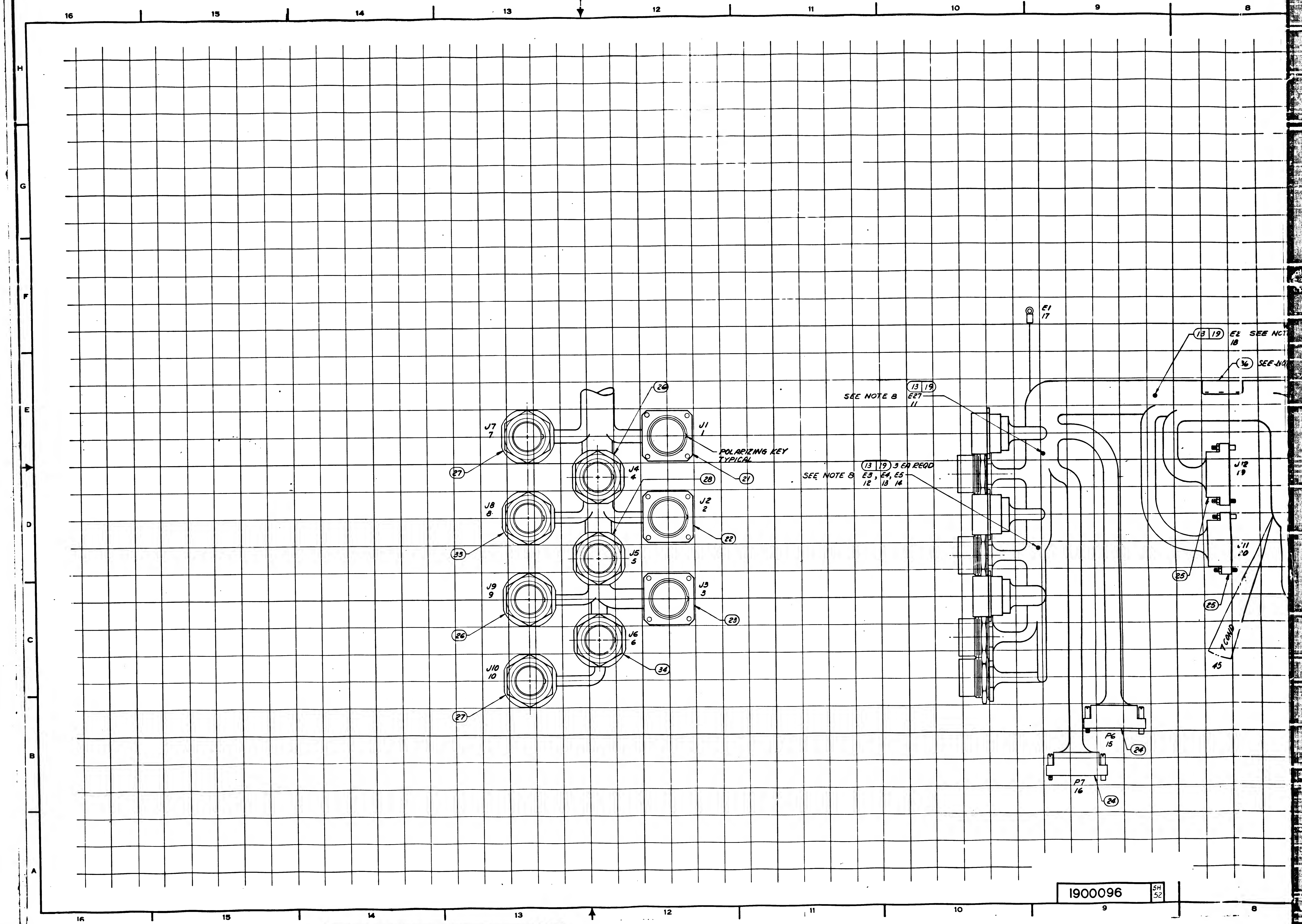
WIRING HARNESS A

| CODE IDENT NO | SIZE | |
|---|---|---|
| | J2 | 1900096 |
| SCALE 1/1 | | SHEET 52 OF 52 |

1900096 SH 52

2/-1900096



1900096 SH 52

1-/-1900096

| APPLICATION | | REVISIONS | | | |
|---|---|---|---|---|---|
| NEXT ASSY | USED ON | SYM | DESCRIPTION | DATE | APPROVAL |
| 1900057-011 | 1900057-011 | H | REPLACES REV. G WITH CHANGE PER MXC 191409<br>REVISED PER TDR 04864 | 63 | TP |
| | | J | CHANGE IN ACCORDANCE WITH MXC 191496 | 9 JAN 64 | WSM |
| | | K | CHANGE IN ACCORDANCE WITH MXC 192540 | 5 FEB 64 | S.A<br>W.S |
| | | L | CHANGE IN ACCORDANCE WITH CM193527 | 19 FEB 64 | S.A.<br>W.S |
| | | M | CHANGE IN ACCORDANCE WITH CM-193646 | 24-FEB-64 | |
| | | N | CHANGE IN ACCORDANCE WITH CM-193808 PER TDRR 08398 | 16 MAR 64 | JM. |
| | | P | CHANGE IN ACCORDANCE WITH CM 197139<br>REVISED PER TDR 10253 | 21 MAY 64 | W.S |
| | | R | CHANGE IN ACCORDANCE WITH CM 197969 TDRR 12895 | 15 JUNE 64 | WK<br>W.S |

Ⓜ

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# FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 01801   2 July 63 DATE

Ⓗ REPLACES REV(G) WITH CHANGE

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| REV | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | S | S | S | R |
| SHEET | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 |

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T REV STATUS OF SHEETS | REV | T | S | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R |
| IA | SHEET | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |

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MILWAUKEE, WISCONSIN

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ACSP PN

DRAWN Coppmann DATE 10 OCT 63
CHECKED 14 OCT 63
APPROVAL 15 OCT 63
APPROVAL L Johnson 12/2/63
NASA APPROVAL 12-3
MIT APPROVAL

WIRING HARNESS A

| CODE IDENT NO. | SIZE | | REV |
|---|---|---|---|
| | A | 1900096 | T |

CONTRACT NAS 9-497

SCALE —

SHEET 1 OF 52

## REVISIONS

(M)

| SYM | DESCRIPTION | DATE | APPROVAL |
|---|---|---|---|
| S | CHANGE IN ACCORDANCE WITH CM198162 TDRR 12887 | 19 JUN 64 | JJJ FK |
| T | CHANGE IN ACCORDANCE WITH CM-198505 TDRR 12878 | 10 JUL 64 | RJJ |

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REVISION T

NASA DRAWING NO. 1900096
SHEET 1A OF 52

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## REVISION STATUS OF SHEETS

| SH | REV | SH | REV | SH | REV | SH | REV | SH | REV | SH | REV | SH | REV | SH | REV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 | T | | | | | | | | | | | | | | |
| 51 | T | | | | | | | | | | | | | | |
| 52 | T | | | | | | | | | | | | | | |

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REVISION T

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PENNANT GENERAL NOTES

NOTE

1 SEE CONDUCTOR CHART. PENNANT NOTE 1.

2 SEE CONDUCTOR CHART. PENNANT NOTE 2.

3 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

4 MARK CONDUCTOR IDENTIFICATION PER ND1002019.

5 MARK CONDUCTOR IDENTIFICATION ON SINGLE CONDUCTORS PER ND1002019 OMITTING ALL SUFFIX LETTERS EXCEPT A AND *.

6 SPACING OF CONDUCTOR IDENTIFICATION SHALL BE EVERY 1.2 INCHES.

7 SPIRALLING OF THE MARKING IS ALLOWED.

8 MARK SLEEVING WITH REFERENCE DESIGNATION AS SHOWN .12 INCH HIGH. COLOR BLACK PER ND1002019.

9 MARK SLEEVING OF MULTI-CONDUCTORS WITH THE CONDUCTOR NUMBER .12 INCH HIGH. COLOR BLACK. PER ND1002019 WHEN SLEEVING ITEM NUMBERS FOLLOW AN A OR T IN THE ACCESSORIES ITEM NUMBER FIELD.

10 A OR T PREFIX IN THE ACCESSORIES ITEM NUMBER COLUMN INDICATES THE READING POSITION AWAY FROM TERMINATION OR TOWARD TERMINATION RESPECTIVELY. OF THE WIRE MARKER SLEEVE.

11 LACE HARNESS USING ITEM 35.

12 IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (FS-267).

13 SOLDER PER MIL-STD-440 USING ITEMS 31 AND 32.

14 Y OR N IN TINNED COLUMN INDICATES YES OR NO.

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PENNANT GENERAL NOTES

NOTE

15 A LETTER WITH AN ASTERISK SUFFIX INDICATES A LOWER CASE LETTER.

16 GRID MODULE IS 1 INCH.

17 UNLESS OTHERWISE SPECIFIED ---
FEATURE CENTERLINES ARE LOCATED WITHIN + OR - .25 INCH.
END OF HOOKUP WIRES OR ACCESSORIES ARE LOCATED WITHIN + OR - .12 INCH.

18 VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.

19 THE SUFFIX LETTER OF A CONDUCTOR IDENTIFICATION NUMBER INDICATES CONDUCTOR SHIELDING. COLOR. OR MARKING.
A - FROM END SHIELD
B - TO END SHIELD
E - GRAY
L - WHITE WITH BLUE TRACER
R - WHITE WITH RED TRACER
X - COAX OUTER CONDUCTOR

20 FASTEN MARKER SECURELY WITH ITEM 35. WRAP MARKER TO CONFORM TO CABLE CONFIGURATION

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PENNANT GENERAL NOTES

NOTE

TOLERANCE CHART. UNLESS OTHERWISE SPECIFIED ---

| APPLICABLE LENGTH FOR WIRE OR CABLE. STRIP WIRE. STRIP JACKET. CUT WIRE OR CUT SHIELD. | TOLERANCE | | | | |
|---|---|---|---|---|---|
| | WIRE OR CABLE | STRIP | | CUT | |
| | | WIRE | JACKET | WIRE | SHIELD |
| UNDER 1 INCH | + .06-.00 | +.03-.00 | +.06-.06 | +.06-.06 | +.06-.06 |
| 1 INCH TO 6 INCHES | + .50-.00 | +.06-.00 | +.25-.25 | +.25-.25 | +.25-.25 |
| 6 INCHES TO 6 FEET | +1.00-.00 | | +.50-.50 | +.50-.50 | +.50-.50 |
| OVER 6 FEET | +2.00-.00 | | | | |

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PENNANT LIST OF MATERIALS

| NOTE | ITEM | QTY | PART NO | DESCRIPTION |
|---|---|---|---|---|
| | 1 | 1 | 1900096-004 | WIRE ND1002181 CLASS 4 WHITE JACKET TYPE 2 24AWG (WHT/RED. WHT/BLU) 73 FT TOTAL LENGTH |
| | 2 | 1 | 1900096-003 | WIRE ND1002181 CLASS 4 WHITE JACKET TYPE 1 24AWG (WHITE) 36 INCHES TOTAL LENGTH |
| | 3 | 1 | 1900096-002 | WIRE ND1002181 CLASS 1 TYPE 1 24AWG (WHITE) 680 FT TOTAL LENGTH |
| | 4 | 1 | 1900096-001 | WIRE ND1002181 CLASS 1 TYPE 1 22AWG (WHITE) 228 FT TOTAL LENGTH |
| 18 | 5 | 60 | 1000243-002 | FERRULE. ELECTRICAL CONDUCTOR INNER |
| 18 | 6 | 60 | 1000242-004 | FERRULE. ELECTRICAL CONDUCTOR OUTER |
| 18 | 7 | 25 | 1000243-006 | FERRULE. ELECTRICAL CONDUCTOR INNER |
| 18 | 8 | 25 | 1000242-005 | FERRULE. ELECTRICAL CONDUCTOR OUTER |
| | 9 | | | DELETED |
| | 10 | 110 | 1010490-198 | INSULATION SLEEVING. ELECTRICAL (HEAT SHRINK) |
| | 11 | 1 | 1010490-200 | INSULATION SLEEVING. ELECTRICAL (HEAT SHRINK) |
| | 13 | 6 | 1016006-002 | SPLICE REDUCER. PERMANENT. CRIMP STYLE. COPPER |
| 18 | 14 | 59 | 1015908- 21 | COAXIAL. SOCKET CONTACT |
| 18 | 15 | 59 | 1015908- 41 | COAXIAL. OUTER MALE BODY |
| 18 | 16 | 59 | 1015908- 51 | COAXIAL. HYRING |
| 18 | 17 | 232 | 1015818-424 | CONNECTOR SOCKET CONTACTS |

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PENNANT LIST OF MATERIALS

| NOTE | ITEM | QTY | PART NO | DESCRIPTION |
|---|---|---|---|---|
| 18 | 18 | 204 | 1015818-420 | CONNECTOR SOCKET CONTACTS |
| | 19 | 6 | 1010490-258 | INSULATION SLEEVING, ELECTRICAL (HEAT SHRINK) |
| 18 | 20 | 2 | 1015902- 46 | TERMINAL LUG |
| | 21 | 1 | MS3127E-24-61P | CONNECTOR, RECEP ELEC |
| | 22 | 1 | MS3127E-24-61PW | CONNECTOR, RECEP ELEC |
| | 23 | 1 | MS3127E-24-61PX | CONNECTOR, RECEP ELEC |
| 18 | 24 | 6 | 1015818-660 | CONNECTOR, PLUG ELEC |
| 18 | 25 | 2 | 1015867-560 | CONNECTOR, RECEP ELEC |
| 18 | 26 | 2 | 1015906-100 | CONNECTOR, RECEP ELEC |
| 18 | 27 | 2 | 1015906-101 | CONNECTOR, RECEP ELEC |
| 18 | 28 | 1 | 1015906-102 | CONNECTOR, RECEP ELEC |
| | 29 | 1 | 1900096-005 | WIRE-COAX MIL-C-17/69A RG188A/U 173 FT TOTAL LG |
| | 30 | 59 | 1010490-202 | INSULATION SLEEVING, ELECTRICAL (HEAT SHRINK) |
| | 31 | AR | QQ-S-571 | SOLDER SN60 (ES-2175 ALLOY 1) |
| | 32 | AR | QQ-S-571 | FLUX TYPE AR (ES-2175 TYPE 1 OR 2) OR MIL-F-14256 FLUX (ES-2798) |
| 18 | 33 | 1 | 1015906-103 | CONNECTOR, RECEP. ELEC. |
| 18 | 34 | 1 | 1015906-104 | CONNECTOR, RECEP. ELEC. |

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PENNANT LIST OF MATERIALS

| NOTE | ITEM | QTY | PART NO | DESCRIPTION |
|---|---|---|---|---|
| | 35 | 1 | MIL-T-713 | LACING TAPE TYPE P, CLASS 2, BLACK (ES-2732 NO. 18) |
| | 36 | 1 | 1016128-001 | BAND IDENTIFICATION, BLANK |
| 18 | 37 | 21 | 1015864-109 | INSULATION SLEEVING |

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| CONDUCTOR NUMBER | | INDIVIDUAL LENGTH ITEM NO. | FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | T/N | FROM TERMINATION SPEC. ITEM NO | FROM NO. | TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | T/N | TO TERMINATION SPEC ITEM NO | TO NO |
|---|---|---|---|---|---|---|---|---|---|---|
| A | 1 | 4 | U1-A | 19N | | 1 | E1 | 25 | 20 | 17 |
| A | 2 | 3 | U1-B | 19N | | 1 | P6-56 | 19N | 17 | 15 |
| A | 3 | 3 | U1-C | 19N | | 1 | P6-54 | 19N | 17 | 15 |
| A | 4 | 3 | U1-D | 19N | | 1 | P6-55 | 19N | 17 | 15 |
| A | 5 | 3 | U1-E | 19N | | 1 | 56A- 1A | 25Y | | 32 |
| A | 6 | 3 | U1-F | 19N | | 1 | P7- 1 | 19N | 18 | 16 |
| A | 7 | 3 | U1-G | 19N | | 1 | P7- 2 | 19N | 18 | 16 |
| A | 8 | 3 | U1-H | 19N | | 1 | P7- 3 | 19N | 18 | 16 |
| A | 9 | 3 | U1-J | 19N | | 1 | P7- 4 | 19N | 18 | 16 |
| A | 10 | 3 | U1-K | 19N | | 1 | P7- 5 | 19N | 18 | 16 |
| A | 11 | 3 | U1-L | 19N | | 1 | P7- 6 | 19N | 18 | 16 |
| A | 12 | 3 | U1-M | 19N | | 1 | P7- 7 | 19N | 18 | 16 |
| A | 13 | 3 | U1-N | 19N | | 1 | P7- 8 | 19N | 18 | 16 |
| A | 14 | 3 | U1-P | 19N | | 1 | P7- 9 | 19N | 18 | 16 |
| A | 15 | 3 | U1-R | 19N | | 1 | P7-11 | 19N | 17 | 16 |
| A | 16 | 3 | U1-S | 19N | | 1 | P7-12 | 19N | 17 | 16 |
| A | 17 | 3 | U1-T | 19N | | 1 | P7-13 | 19N | 17 | 16 |
| A | 18 | 3 | U1-U | 19N | | 1 | P7-14 | 19N | 17 | 16 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR NUMBER | | INDIVIDUAL LENGTH ITEM NO. | FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | T/N | FROM TERMINATION SPEC. ITEM NO. | FROM NO. | TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | T/N | TO TERMINATION SPEC ITEM NO. | TO NO. |
|---|---|---|---|---|---|---|---|---|---|---|
| A | 19 | 3 | U1-V | 19N | | 1 | P7-15 | 19N | 17 | 16 |
| A | 20 | 3 | U1-W | 19N | | 1 | P7-16 | 19N | 17 | 16 |
| A | 21 | 3 | U1-X | 19N | | 1 | P7-17 | 19N | 17 | 16 |
| A | 22 | 3 | U1-Y | 19N | | 1 | P7-18 | 19N | 17 | 16 |
| A | 23 | 3 | U1-Z | 19N | | 1 | P7-19 | 19N | 17 | 16 |
| A | 24 | 3 | U1-A* | 19N | | 1 | P7-20 | 19N | 17 | 16 |
| A | 25 | 3 | U1-B* | 19N | | 1 | P7-21 | 19N | 17 | 16 |
| A | 26 | 3 | U1-C* | 19N | | 1 | P7-22 | 19N | 17 | 16 |
| A | 27 | 3 | U1-D* | 19N | | 1 | P7-23 | 19N | 17 | 16 |
| A | 28 | 3 | U1-E* | 19N | | 1 | P7-24 | 19N | 17 | 16 |
| A | 29 | 3 | U1-F* | 19N | | 1 | P7-25 | 19N | 17 | 16 |
| A | 30 | 3 | U1-G* | 19N | | 1 | P7-26 | 19N | 17 | 16 |
| A | 31 | 3 | U1-H* | 19N | | 1 | P7-27 | 19N | 17 | 16 |
| A | 32 | 3 | U1-I* | 19N | | 1 | P7-28 | 19N | 17 | 16 |
| A | 33 | 3 | U1-J* | 19N | | 1 | P7-29 | 19N | 18 | 16 |
| A | 34 | 3 | U1-K* | 19N | | 1 | P7-30 | 19N | 18 | 16 |
| A | 35 | 3 | U1-M* | 19N | | 1 | P7-31 | 19N | 18 | 16 |
| A | 36 | 3 | U1-N* | 19N | | 1 | P7-32 | 19N | 18 | 16 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T/N | FROM TERMINATION SPEC ITEM NO | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T/N | TO TERMINATION SPEC ITEM NO | NO |
|---|---|---|---|---|---|---|---|---|---|
| A 37 | 3 | J1-P* | 19N | | 1 | P7-33 | 19N | 18 | 16 |
| A 38 | 3 | J1-Q* | 19N | | 1 | P7-34 | 19N | 18 | 16 |
| A 39 | 3 | J1-R* | 19N | | 1 | P7-35 | 19N | 18 | 16 |
| A 40 | 3 | J1-S* | 19N | | 1 | P7-36 | 19N | 18 | 16 |
| A 41 | 3 | J1-T* | 19N | | 1 | P7-37 | 19N | 18 | 16 |
| A 42 | 3 | J1-U* | 19N | | 1 | S7A- 1A | 25Y | | 31 |
| A 43 | 3 | J1-V* | 19N | | 1 | P6-51 | 19N | 17 | 15 |
| A 44 | 3 | J1-W* | 19N | | 1 | S11A- 1A | 25Y | | 28 |
| A 45 | 3 | J1-X* | 19N | | 1 | S11A- 3A | 25Y | | 29 |
| A 46 | 3 | J1-Y* | 19N | | 1 | S11A- 5A | 25Y | | 28 |
| A 47 | 3 | J1-BB | 19N | | 1 | P6-48 | 19N | 17 | 15 |
| A 48 | 3 | J1-AA | 19N | | 1 | P6-49 | 19N | 17 | 15 |
| A 49 | 3 | J1-Z* | 19N | | 1 | P6-50 | 19N | 17 | 15 |
| A 50 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 50A | 4 | SHLD A50 | 25N | | | E27 | 25N | | 11 |
| A 50L | | J1-CC | 19N | | 1 | P6-16 | 19N | 17 | 15 |
| A 50R | | J1-DD | 19N | | 1 | P6-21 | 19N | 17 | 15 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

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| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T/N | FROM TERMINATION SPEC ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T/N | TO TERMINATION SPEC ITEM NO | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 51 | 3 | J2-B | 19N | | 2 | P2-61 | 19N | 18 | 41 |
| A 52 | 3 | J2-C | 19N | | 2 | P2-62 | 19N | 18 | 41 |
| A 53 | 3 | J2-D | 19N | | 2 | P2-52 | 19N | 18 | 41 |
| A 54 | 3 | J2-E | 19N | | 2 | P2-53 | 19N | 18 | 41 |
| A 55 | 3 | J2-F | 19N | | 2 | P2-54 | 19N | 18 | 41 |
| A 56 | 3 | J2-G | 19N | | 2 | P2-55 | 19N | 18 | 41 |
| A 57 | 3 | J2-H | 19N | | 2 | P2-56 | 19N | 18 | 41 |
| A 58 | 3 | J2-J | 19N | | 2 | P2-57 | 19N | 18 | 41 |
| A 59 | 3 | J2-K | 19N | | 2 | P2-58 | 19N | 18 | 41 |
| A 60 | 3 | J2-L | 19N | | 2 | P2-59 | 19N | 18 | 41 |
| A 61 | 3 | J2-M | 19N | | 2 | P2-60 | 19N | 18 | 41 |
| A 62 | 3 | J2-N | 19N | | 2 | J12-15 | 19N | 17 | 19 |
| A 63 | 3 | J2-P | 19N | | 2 | J12-10 | 19N | 18 | 19 |
| A 64 | 3 | J2-R | 19N | | 2 | P6-46 | 19N | 18 | 15 |
| A 65 | 3 | J2-S | 19N | | 2 | XF1- 1 | 25Y | | 21 |
| A 66 | 3 | J2-T | 19N | | 2 | P6-57 | 19N | 17 | 15 |
| A 67 | 3 | J2-U | 19N | | 2 | J12-29 | 19N | 18 | 19 |
| A 68 | 3 | J2-V | 19N | | 2 | J12-28 | 19N | 18 | 19 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T/N | FROM TERMINATION SPEC. ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T/N | TO TERMINATION SPEC ITEM NO | NO |
|---|---|---|---|---|---|---|---|---|---|
| A 69 | 3 | J2-W | 19N | | 2 | J12-27 | 19N | 18 | 19 |
| A 70 | 3 | J2-X | 19N | | 2 | J12-26 | 19N | 18 | 19 |
| A 71 | 3 | J2-Y | 19N | | 2 | J12-16 | 19N | 18 | 19 |
| A 72 | 3 | J2-Z | 19N | | 2 | J12-17 | 19N | 18 | 19 |
| A 73 | 3 | J2-A* | 19N | | 2 | J12-18 | 19N | 18 | 19 |
| A 74 | 3 | J2-B* | 19N | | 2 | J12-19 | 19N | 18 | 19 |
| A 75 | 3 | J2-C* | 19N | | 2 | J12-20 | 19N | 18 | 19 |
| A 76 | 3 | J2-D* | 19N | | 2 | J12-21 | 19N | 18 | 19 |
| A 77 | 3 | J2-E* | 19N | | 2 | J12-22 | 19N | 18 | 19 |
| A 78 | 3 | J2-F* | 19N | | 2 | J12-23 | 19N | 18 | 19 |
| A 79 | 3 | J2-G* | 19N | | 2 | J12-24 | 19N | 18 | 19 |
| A 80 | 3 | J2-H* | 19N | | 2 | J12-30 | 19N | 18 | 19 |
| A 81 | 3 | J2-I* | 19N | | 2 | J12-25 | 19N | 17 | 19 |
| A 82 | 3 | J2-M* | 19N | | 2 | P6-32 | 19N | 17 | 15 |
| A 83 | 3 | J2-N* | 19N | | 2 | P6-33 | 19N | 17 | 15 |
| A 84 | 3 | J2-P* | 19N | | 2 | P6-34 | 19N | 17 | 15 |
| A 85 | 3 | J2-Q* | 19N | | 2 | P6-35 | 19N | 17 | 15 |
| A 86 | 3 | J2-R* | 19N | | 2 | P6-36 | 19N | 17 | 15 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T/N | FROM TERMINATION SPEC ITEM NO | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T/N | TO TERMINATION SPEC ITEM NO | NO |
|---|---|---|---|---|---|---|---|---|---|
| A 87 | 3 | J2-S* | 19N | | 2 | P6-37 | 19N | 17 | 15 |
| A 88 | 3 | J2-T* | 19N | | 2 | P6-38 | 19N | 17 | 15 |
| A 89 | 3 | J2-U* | 19N | | 2 | P6-39 | 19N | 17 | 15 |
| A 90 | 3 | J2-V* | 19N | | 2 | P6-40 | 19N | 17 | 15 |
| A 91 | 3 | J2-W* | 19N | | 2 | P6-41 | 19N | 17 | 15 |
| A 92 | 3 | J2-X* | 19N | | 2 | P6-42 | 19N | 17 | 15 |
| A 93 | 3 | J2-Y* | 19N | | 2 | J11-53 | 19N | 17 | 15 |
| A 94 | 3 | J2-Z* | 19N | | 2 | J11-59 | 19N | 17 | 15 |
| A 95 | 3 | J2-AA | 19N | | 2 | P6-45 | 19N | 17 | 15 |
| A 96 | 3 | J2-BB | 19N | | 2 | P6-29 | 19N | 17 | 15 |
| A 97 | 3 | J2-CC | 19N | | 2 | S13SW4-C | 25Y | | 27 |
| A 98 | 3 | J2-EE | 19N | | 2 | P6-31 | 19N | 17 | 15 |
| A 99 | 3 | J2-FF | 19N | | 2 | P6-30 | 19N | 17 | 15 |
| A 100 | 3 | J2-GG | 19N | | 2 | S13SW2-NC | 25Y | | 27 |
| A 101 | 3 | J2-GG | 19N | | 2 | J2-MM | 19N | | 2 |
| A 102 | 4 | J3-A | 19N | | 3 | E2 | 25N | | 18 |
| A 103 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR NUMBER | ITEM NO | FROM CIRCUIT POINT | T/N | TERMINATION SPEC ITEM NO | NO. | TO CIRCUIT POINT | T/N | TERMINATION SPEC ITEM NO | NO |
|---|---|---|---|---|---|---|---|---|---|
| A 103A | 4 | SHLD A103 | 25N | | | E3 | 25N | | 12 |
| A 103L | | J3-B* | 19N | | 3 | S3A-10B | 25Y | | 39 |
| A 103R | | J3-B | 19N | | 3 | S3A-10A | 25Y | | 39 |
| A 104 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 104A | 4 | SHLD A104 | 25N | | | E3 | 25N | | 12 |
| A 104L | | J3-C* | 19N | | 3 | S3A- 6B | 25Y | | 39 |
| A 104R | | J3-C | 19N | | 3 | S3A- 6A | 25Y | | 39 |
| A 105 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 105A | 4 | SHLD A105 | 25N | | | E3 | 25N | | 12 |
| A 105L | | J3-D* | 19N | | 3 | S3A- 5B | 25Y | | 39 |
| A 105R | | J3-D | 19N | | 3 | S3A- 5A | 25Y | | 39 |
| A 106 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 106A | 4 | SHLD A106 | 25N | | | E3 | 25N | | 12 |
| A 106L | | J3-E* | 19N | | 3 | S3A- 4B | 25Y | | 39 |
| A 106R | | J3-E | 19N | | 3 | S3A- 4A | 25Y | | 39 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR NUMBER | ITEM NO | FROM CIRCUIT POINT | T/N | TERMINATION SPEC ITEM NO | NO. | TO CIRCUIT POINT | T/N | TERMINATION SPEC ITEM NO | NO |
|---|---|---|---|---|---|---|---|---|---|
| A 107 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 107A | 4 | SHLD A107 | 25N | | | E3 | 25N | | 12 |
| A 107L | | J3-F* | 19N | | 3 | S3A- 3B | 25Y | | 39 |
| A 107R | | J3-F | 19N | | 3 | S3A- 3A | 25Y | | 39 |
| A 108 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 108A | 4 | SHLD A108 | 25N | | | E3 | 25N | | 12 |
| A 108L | | J3-G* | 19N | | 3 | S3A- 2B | 25Y | | 39 |
| A 108R | | J3-G | 19N | | 3 | S3A- 2A | 25Y | | 39 |
| A 109 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 109A | 4 | SHLD A109 | 25N | | | E4 | 25N | | 13 |
| A 109L | | J3-H* | 19N | | 3 | P6-14 | 19N | 17 | 15 |
| A 109R | | J3-H | 19N | | 3 | P6-13 | 19N | 17 | 15 |
| A 110 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 110A | 4 | SHLD A110 | 25N | | | E4 | 25N | | 13 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR NUMBER | ITEM NO | FROM CIRCUIT POINT | T/N | TERMINATION SPEC ITEM NO | NO. | TO CIRCUIT POINT | T/N | TERMINATION SPEC ITEM NO | NO |
|---|---|---|---|---|---|---|---|---|---|
| A 110L | | J3-J* | 19N | | 3 | S1A- 6B | 25Y | | 38 |
| A 110R | | J3-J | 19N | | 3 | S1A- 6A | 25Y | | 38 |
| A 111 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 111A | 4 | SHLD A111 | 25N | | | E4 | 25N | | 13 |
| A 111L | | J3-K* | 19N | | 3 | S2B- 5B | 25Y | | 30 |
| A 111R | | J3-K | 19N | | 3 | S2B- 5A | 25Y | | 30 |
| A 112 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 112A | 4 | SHLD A112 | 25N | | | E4 | 25N | | 13 |
| A 112L | | J3-M* | 19N | | 3 | S8A- 5B | 25Y | | 29 |
| A 112R | | J3-M | 19N | | 3 | S8A- 5A | 25Y | | 29 |
| A 113 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 113A | 4 | SHLD A113 | 25N | | | E4 | 25N | | 13 |
| A 113L | | J3-N* | 19N | | 3 | S1A- 1B | 25Y | | 38 |
| A 113R | | J3-N | 19N | | 3 | S1A- 1A | 25Y | | 38 |
| A 114 | 1 | | | A 10 | | | | A 10 | |

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2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR NUMBER | ITEM NO | FROM CIRCUIT POINT | T/N | TERMINATION SPEC ITEM NO | NO. | TO CIRCUIT POINT | T/N | TERMINATION SPEC ITEM NO | NO. |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 7 8 | | | | | |
| A 114A | 4 | SHLD A114 | 25N | | | E5 | 25N | | 14 |
| A 114L | | J3-P* | 19N | | 3 | S1A- 3B | 25Y | | 38 |
| A 114R | | J3-P | 19N | | 3 | S1A- 3A | 25Y | | 38 |
| A 115 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 115A | 4 | SHLD A115 | 25N | | | E5 | 25N | | 14 |
| A 115L | | J3-R* | 19N | | 3 | S8A- 4B | 25Y | | 29 |
| A 115R | | J3-R | 19N | | 3 | S8A- 4A | 25Y | | 29 |
| A 116 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 116A | 4 | SHLD A116 | 25N | | | E5 | 25N | | 14 |
| A 116L | | J3-S* | 19N | | 3 | S2B- 4B | 25Y | | 30 |
| A 116R | | J3-S | 19N | | 3 | S2B- 4A | 25Y | | 30 |
| A 117 | 1 | | | A 10 | | | | A 10 | |
| | | | | 7 8 | | | | | |
| A 117A | 4 | SHLD A117 | 25N | | | E5 | 25N | | 14 |
| A 117L | | J3-T* | 19N | | 3 | S1A- 4B | 25Y | | 38 |

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2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR NUMBER | ITEM NO | 2 | FROM CIRCUIT POINT | 2 | T N | TERMINATION SPEC ITEM NO. | | NO. | TO CIRCUIT POINT | 2 | T N | TERMINATION SPEC ITEM NO. | | NO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 117R | | | J3-T | 19N | | | | 3 | S1A- 4A | 25Y | | | | 38 |
| A 118 | 1 | | | | | A | 10 | | | | | A | 10 | |
| | | | | | | 7 | 8 | | | | | | | |
| A 118A | 4 | | SHLD A118 | 25N | | | | | E5 | 25N | | | | 14 |
| A 118L | | | J3-U* | 19N | | | | 3 | S1A- 5B | 25Y | | | | 38 |
| A 118R | | | J3-U | 19N | | | | 3 | S1A- 5A | 25Y | | | | 38 |
| A 119 | 3 | | J3-AA | 19N | | | | 3 | S2A- 1A | 25Y | | | | 30 |
| A 120 | 3 | | J3-BB | 19N | | | | 3 | S2A- 3A | 25Y | | | | 30 |
| A 121 | 3 | | J3-CC | 19N | | | | 3 | S2A- 2A | 25Y | | | | 30 |
| A 122 | 3 | | J3-DD | 19N | | | | 3 | S2A- 1B | 25Y | | | | 30 |
| A 123 | 3 | | J3-EE | 19N | | | | 3 | S2A- 3B | 25Y | | | | 30 |
| A 124 | 29 | | | 56N | | A | 30 | | | | | A | 10 | |
| | | | | | | 15 | 16 | | | | | 5 | 6 | |
| A 124B | 3 | | P5-66 | 19N | | 18 | | 43 | SHLD A124 | 25N | | | | |
| A 124E | | | J4-A1 | 13N | | 14 | | 4 | P5-15 | 19N | | 18 | | 43 |
| A 124X | | | J4-A2 | | 28 | | | 4 | SHLD A124 | | | | | |
| A 125 | 29 | | | 56N | | A | 30 | | | | | A | 10 | |
| | | | | | | 15 | 16 | | | | | 5 | 6 | |

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| CONDUCTOR NUMBER | ITEM NO | 2 | FROM CIRCUIT POINT | 2 | T N | TERMINATION SPEC ITEM NO. | | NO. | TO CIRCUIT POINT | 2 | T N | TERMINATION SPEC ITEM NO. | | NO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 125B | 3 | | P5-64 | 19N | | 18 | | 43 | SHLD A125 | 25N | | | | |
| A 125E | | | J4-B1 | 13N | | 14 | | 4 | P5-13 | 19N | | 18 | | 43 |
| A 125X | | | J4-B2 | | 28 | | | 4 | SHLD A125 | | | | | |
| A 126 | 29 | | | 56N | | A | 30 | | | | | A | 10 | |
| | | | | | | 15 | 16 | | | | | 5 | 6 | |
| A 126B | 3 | | P5-62 | 19N | | 18 | | 43 | SHLD A126 | 25N | | | | |
| A 126E | | | J4-C1 | 13N | | 14 | | 4 | P5- 9 | 19N | | 18 | | 43 |
| A 126X | | | J4-C2 | | 28 | | | 4 | SHLD A126 | | | | | |
| A 127 | 29 | | | 56N | | A | 30 | | | | | A | 10 | |
| | | | | | | 15 | 16 | | | | | 5 | 6 | |
| A 127B | 3 | | P5-58 | 19N | | 18 | | 43 | SHLD A127 | 25N | | | | |
| A 127E | | | J4-D1 | 13N | | 14 | | 4 | P5- 7 | 19N | | 18 | | 43 |
| A 127X | | | J4-D2 | | 28 | | | 4 | SHLD A127 | | | | | |
| A 128 | 29 | | | 56N | | A | 30 | | | | | A | 10 | |
| | | | | | | 15 | 16 | | | | | 5 | 6 | |
| A 128B | 3 | | P5-60 | 19N | | 18 | | 43 | SHLD A128 | 25N | | | | |
| A 128E | | | J4-E1 | 13N | | 14 | | 4 | P5- 5 | 19N | | 18 | | 43 |
| A 128X | | | J4-E2 | | 28 | | | 4 | SHLD A128 | | | | | |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE - NONE | REV LTR R | SHEET 20 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO | 2 | FROM CIRCUIT POINT | 2 | T N | TERMINATION SPEC ITEM NO. | | NO. | TO CIRCUIT POINT | 2 | T N | TERMINATION SPEC ITEM NO. | | NO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 129 | 29 | | | 56N | | A | 30 | | | | | A | 10 | |
| | | | | | | 15 | 16 | | | | | 5 | 6 | |
| A 129B | 3 | | P5-50 | 19N | | 18 | | 43 | SHLD A129 | 25N | | | | |
| A 129E | | | J4-F1 | 13N | | 14 | | 4 | P5- 3 | 19N | | 18 | | 43 |
| A 129X | | | J4-F2 | | 28 | | | 4 | SHLD A129 | | | | | |
| A 130 | 29 | | | 56N | | A | 30 | | | | | A | 10 | |
| | | | | | | 15 | 16 | | | | | 5 | 6 | |
| A 130B | 3 | | P5-52 | 19N | | 18 | | 43 | SHLD A130 | 25N | | | | |
| A 130E | | | J4-G1 | 13N | | 14 | | 4 | P5- 1 | 19N | | 18 | | 43 |
| A 130X | | | J4-G2 | | 28 | | | 4 | SHLD A130 | | | | | |
| A 131 | 29 | | | 56N | | A | 30 | | | | | A | 10 | |
| | | | | | | 15 | 16 | | | | | 5 | 6 | |
| A 131B | 3 | | P5-22 | 19N | | 18 | | 43 | SHLD A131 | 25N | | | | |
| A 131E | | | J4-K1 | 13N | | 14 | | 4 | XF2- 1 | 25Y | | | | 23 |
| A 131X | | | J4-K2 | | 28 | | | 4 | SHLD A131 | | | | | |
| A 132 | 29 | | | 56N | | A | 30 | | | | | A | 10 | |
| | | | | | | 15 | 16 | | | | | 5 | 6 | |
| A 132B | 3 | | P5-14 | 19N | | 18 | | 43 | SHLD A132 | 25N | | | | |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE - NONE | REV LTR R | SHEET 21 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO | 2 | FROM CIRCUIT POINT | 2 | T N | TERMINATION SPEC ITEM NO. | | NO. | TO CIRCUIT POINT | 2 | T N | TERMINATION SPEC ITEM NO. | | NO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 132E | | | J4-J1 | 13N | | 14 | | 4 | P5-63 | 19N | | 18 | | 43 |
| A 132X | | | J4-J2 | | 28 | | | 4 | SHLD A132 | | | | | |
| A 133 | 29 | | | 56N | | A | 30 | | | | | A | 10 | |
| | | | | | | 15 | 16 | | | | | 5 | 6 | |
| A 133B | 3 | | P1-62 | 19N | | 18 | | 40 | SHLD A133 | 25N | | | | |
| A 133E | | | J5-A1 | 13N | | 14 | | 5 | P1-25 | 19N | | 18 | | 40 |
| A 133X | | | J5-A2 | | 28 | | | 5 | SHLD A133 | | | | | |
| A 134 | 29 | | | 56N | | A | 30 | | | | | A | 10 | |
| | | | | | | 15 | 16 | | | | | 5 | 6 | |
| A 134B | 3 | | P1-64 | 19N | | 18 | | 40 | SHLD A134 | 25N | | | | |
| A 134E | | | J5-B1 | 13N | | 14 | | 5 | P1-23 | 19N | | 18 | | 40 |
| A 134X | | | J5-B2 | | 28 | | | 5 | SHLD A134 | | | | | |
| A 135 | 29 | | | 56N | | A | 30 | | | | | A | 10 | |
| | | | | | | 15 | 16 | | | | | 5 | 6 | |
| A 135B | 3 | | P1-66 | 19N | | 18 | | 40 | SHLD A135 | 25N | | | | |
| A 135E | | | J5-C1 | 13N | | 14 | | 5 | P1-21 | 19N | | 18 | | 40 |
| A 135X | | | J5-C2 | | 28 | | | 5 | SHLD A135 | | | | | |
| A 136 | 29 | | | 56N | | A | 30 | | | | | A | 10 | |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE NONE | REV LTR R | SHEET 22 OF 52

GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | 2 | T N | TERMINATION SPEC. ITEM NO | NO. | TO CIRCUIT POINT | 2 | TERMINATION SPEC ITEM NO. | NO |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 15 16 | | | | 5 6 | |
| A 136B | 3 | P1-56 | 19N | | 18 | 40 | SHLD A136 | 25N | | |
| A 136E | | J5-D1 | 13N | | 14 | 5 | P1-19 | 19N | 18 | 40 |
| A 136X | | J5-D2 | | 28 | | 5 | SHLD A136 | | | |
| A 137 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 137B | 3 | P1-58 | 19N | | 18 | 40 | SHLD A137 | 25N | | |
| A 137E | | J5-E1 | 13N | | 14 | 5 | P1-17 | 19N | 18 | 40 |
| A 137X | | J5-E2 | | 28 | | 5 | SHLD A137 | | | |
| A 138 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 138B | 3 | P1-60 | 19N | | 18 | 40 | SHLD A138 | 25N | | |
| A 138E | | J5-F1 | 13N | | 14 | 5 | P1-13 | 19N | 18 | 40 |
| A 138X | | J5-F2 | | 28 | | 5 | SHLD A138 | | | |
| A 139 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 139B | 3 | P1-52 | 19N | | 18 | 40 | SHLD A139 | 25N | | |
| A 139E | | J5-G1 | 13N | | 14 | 5 | P1-11 | 19N | 18 | 40 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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|---|---|---|
| MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096 |
| SCALE - NONE | REV LTR R | SHEET 23 OF 52 |

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | 2 | T N | TERMINATION SPEC. ITEM NO. | NO. | TO CIRCUIT POINT | 2 | TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|
| A 139X | | J5-G2 | | 28 | | 5 | SHLD A139 | | | |
| A 140 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 140B | 3 | P1-53 | 19N | | 18 | 40 | SHLD A140 | 25N | | |
| A 140E | | J5-H1 | 13N | | 14 | 5 | P1- 9 | 19N | 18 | 40 |
| A 140X | | J5-H2 | | 28 | | 5 | SHLD A140 | | | |
| A 141 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 141B | 3 | P1-54 | 19N | | 18 | 40 | SHLD A141 | 25N | | |
| A 141E | | J5-J1 | 13N | | 14 | 5 | P1- 7 | 19N | 18 | 40 |
| A 141X | | J5-J2 | | 28 | | 5 | SHLD A141 | | | |
| A 142 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 142B | 3 | P1-43 | 19N | | 18 | 40 | SHLD A142 | 25N | | |
| A 142E | | J6-A1 | 13N | | 14 | 6 | P1- 5 | 19N | 18 | 40 |
| A 142X | | J6-A2 | | 28 | | 6 | SHLD A142 | | | |
| A 143 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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|---|---|---|
| MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096 |
| SCALE - NONE | REV LTR R | SHEET 24 OF 52 |

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO | FROM CIRCUIT POINT | 2 | T N | TERMINATION SPEC. ITEM NO | NO. | TO CIRCUIT POINT | 2 | TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|
| A 143B | 3 | P1-44 | 19N | | 18 | 40 | SHLD A143 | 25N | | |
| A 143E | | J6-B1 | 13N | | 14 | 6 | P1- 3 | 19N | 18 | 40 |
| A 143X | | J6-B2 | | 28 | | 6 | SHLD A143 | | | |
| A 144 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 144B | 3 | P1-24 | 19N | | 18 | 40 | SHLD A144 | 25N | | |
| A 144E | | J6-C1 | 13N | | 14 | 6 | P1- 1 | 19N | 18 | 40 |
| A 144X | | J6-C2 | | 28 | | 6 | SHLD A144 | | | |
| A 145 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 145B | 3 | P1-22 | 19N | | 18 | 40 | SHLD A145 | 25N | | |
| A 145E | | J6-D1 | 13N | | 14 | 6 | P1-61 | 19N | 18 | 40 |
| A 145X | | J6-D2 | | 28 | | 6 | SHLD A145 | | | |
| A 146 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 146B | 3 | P1-20 | 19N | | 18 | 40 | SHLD A146 | 25N | | |
| A 146E | | J6-E1 | 13N | | 14 | 6 | P1-63 | 19N | 18 | 40 |
| A 146X | | J6-E2 | | 28 | | 6 | SHLD A146 | | | |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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|---|---|---|
| MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096 |
| SCALE - NONE | REV LTR R | SHEET 25 OF 52 |

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO | FROM CIRCUIT POINT | 2 | T N | TERMINATION SPEC ITEM NO. | NO. | TO CIRCUIT POINT | 2 | TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|
| A 147 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 147B | 3 | P1-18 | 19N | | 18 | 40 | SHLD A147 | 25N | | |
| A 147E | | J6-F1 | 13N | | 14 | 6 | P1-65 | 19N | 18 | 40 |
| A 147X | | J6-F2 | | 28 | | 6 | SHLD A147 | | | |
| A 148 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 148B | 3 | P1-16 | 19N | | 18 | 40 | SHLD A148 | 25N | | |
| A 148E | | J6-G1 | 13N | | 14 | 6 | P1-55 | 19N | 18 | 40 |
| A 148X | | J6-G2 | | 28 | | 6 | SHLD A148 | | | |
| A 149 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 149B | 3 | P1-14 | 19N | | 18 | 40 | SHLD A149 | 25N | | |
| A 149E | | J6-H1 | 13N | | 14 | 6 | P1-57 | 19N | 18 | 40 |
| A 149X | | J6-H2 | | 28 | | 6 | SHLD A149 | | | |
| A 150 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 150B | 3 | P6- 3 | 19N | | 18 | 15 | SHLD A150 | 25N | | |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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|---|---|---|
| MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096 |
| SCALE - NONE | REV LTR R | SHEET 26 OF 52 |

GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | 2 | TERMINATION SPEC ITEM NO | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | TERMINATION SPEC ITEM NO. | NO |
|---|---|---|---|---|---|---|---|---|---|---|
| A 150E | | J7-A1 | 13N | | 14 | 7 | P6- 4 | 19N | 18 | 15 |
| A 150X | | J7-A2 | | 28 | | 7 | SHLD A150 | | | |
| A 151 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 151B | 3 | P2-36 | 19N | | 17 | 41 | SHLD A151 | 25N | | |
| A 151E | | J7-B1 | 13N | | 14 | 7 | P2-51 | 19N | 18 | 41 |
| A 151X | | J7-B2 | | 28 | | 7 | SHLD A151 | | | |
| A 152 | 29 | | 56 | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 152B | 3 | P2-26 | 19N | | 17 | 41 | SHLD A152 | 25N | | |
| A 152E | | J7-C1 | 13N | | 14 | 7 | P2-49 | 19N | 18 | 41 |
| A 152X | | J7-C2 | | 28 | | 7 | SHLD A152 | | | |
| A 153 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 153B | 3 | P2-28 | 19N | | 17 | 41 | SHLD A153 | 25N | | |
| A 153E | | J7-D1 | 13N | | 14 | 7 | P2-48 | 19N | 18 | 41 |
| A 153X | | J7-D2 | | 28 | | 7 | SHLD A153 | | | |
| A 154 | 29 | | 56N | | A 30 | | | | A 10 | |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE-NONE | REV LTR R | SHEET 27 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | 2 | TERMINATION SPEC ITEM NO | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | TERMINATION SPEC ITEM NO. | NO |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 15 16 | | | | 5 6 | |
| A 154B | 3 | P2-30 | 19N | | 17 | 41 | SHLD A154 | 25N | | |
| A 154E | | J7-E1 | 13N | | 14 | 7 | P2-44 | 19N | 18 | 41 |
| A 154X | | J7-E2 | | 28 | | 7 | SHLD A154 | | | |
| A 155 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 155B | 3 | P2-20 | 19N | | 17 | 41 | SHLD A155 | 25N | | |
| A 155E | | J7-F1 | 13N | | 14 | 7 | P2-43 | 19N | 18 | 41 |
| A 155X | | J7-F2 | | 28 | | 7 | SHLD A155 | | | |
| A 156 | 29 | | | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 156B | 3 | P2-22 | 19N | | 17 | 41 | SHLD A156 | 25N | | |
| A 156E | | J7-G1 | 13N | | 14 | 7 | P2-39 | 19N | 18 | 41 |
| A 156X | | J7-G2 | | 28 | | 7 | SHLD A156 | | | |
| A 157 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 157B | 3 | P2-23 | 19N | | 17 | 41 | SHLD A157 | 25N | | |
| A 157E | | J7-H1 | 13N | | 14 | 7 | P2- 6 | 19N | 18 | 41 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE-NONE | REV LTR R | SHEET 28 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | 2 | TERMINATION SPEC ITEM NO | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | TERMINATION SPEC ITEM NO. | NO |
|---|---|---|---|---|---|---|---|---|---|---|
| A 157X | | J7-H2 | | 28 | | 7 | SHLD A157 | | | |
| A 158 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 158B | 3 | P2-24 | 19N | | 17 | 41 | SHLD A158 | 25N | | |
| A 158E | | J7-J1 | 13N | | 14 | 7 | P2- 5 | 19N | 18 | 41 |
| A 158X | | J7-J2 | | 28 | | 7 | SHLD A158 | | | |
| A 159 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 159B | 3 | P2-13 | 19N | | 17 | 41 | SHLD A159 | 25N | | |
| A 159E | | J8-A1 | 13N | | 14 | 8 | P2- 4 | 19N | 18 | 41 |
| A 159X | | J8-A2 | | 28 | | 8 | SHLD A159 | | | |
| A 160 | 29 | | 56 | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 160B | 3 | P2-14 | 19N | | 17 | 41 | SHLD A160 | 25N | | |
| A 160E | | J8-B1 | 13N | | 14 | 8 | P2- 3 | 19N | 18 | 41 |
| A 160X | | J8-B2 | | 28 | | 8 | SHLD A160 | | | |
| A 161 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE-NONE | REV LTR R | SHEET 29 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | 2 | TERMINATION SPEC ITEM NO | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | T N | TERMINATION SPEC ITEM NO. | NO |
|---|---|---|---|---|---|---|---|---|---|---|
| A 161B | 3 | P2-15 | 19N | | 17 | 41 | SHLD A161 | 25N | | |
| A 161E | | J8-C1 | 13N | | 14 | 8 | P2- 2 | 19N | 18 | 41 |
| A 161X | | J8-C2 | | 28 | | 8 | SHLD A161 | | | |
| A 162 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 162B | 3 | P2-50 | 19N | | 17 | 41 | SHLD A162 | 25N | | |
| A 162E | | J8-D1 | 13N | | 14 | 8 | P2- 1 | 19N | 18 | 41 |
| A 162X | | J8-D2 | | 28 | | 8 | SHLD A162 | | | |
| A 163 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 163B | 3 | P2-47 | 19N | | 17 | 41 | SHLD A163 | 25N | | |
| A 163E | | J8-E1 | 13N | | 14 | 8 | P2-35 | 19N | 18 | 41 |
| A 163X | | J8-E2 | | 28 | | 8 | SHLD A163 | | | |
| A 164 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 164B | 3 | P2-46 | 19N | | 17 | 41 | SHLD A164 | 25N | | |
| A 164E | | J8-F1 | 13N | | 14 | 8 | P2-25 | 19N | 18 | 41 |
| A 164X | | J8-F2 | | 28 | | 8 | SHLD A164 | | | |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE-NONE | REV LTR R | SHEET 30 OF 52

GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | 2 | T N 2 | FROM TERMINATION ITEM NO. | NO. | TO CIRCUIT POINT | 2 | TO TERMINATION ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|
| A 165 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 165B | 3 | P2-45 | 19N | | 17 | 41 | SHLD A165 | 25N | | |
| A 165E | | J8-G1 | 13N | | 14 | 8 | P2-27 | 19N | 18 | 41 |
| A 165X | | J8-G2 | | 28 | | 8 | SHLD A165 | | | |
| A 166 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 166B | 3 | P2-42 | 19N | | 17 | 41 | SHLD A166 | 25N | | |
| A 166E | | J8-H1 | 13N | | 14 | 8 | P2-29 | 19N | 18 | 41 |
| A 166X | | J8-H2 | | 28 | | 8 | SHLD A166 | | | |
| A 167 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 167B | 3 | P2-41 | 19N | | 17 | 41 | SHLD A167 | 25N | | |
| A 167E | | J8-J1 | 13N | | 14 | 8 | P2-19 | 19N | 18 | 41 |
| A 167X | | J8-J2 | | 28 | | 8 | SHLD A167 | | | |
| A 168 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 168B | 3 | P6- 7 | 19N | | 18 | 15 | SHLD A168 | 25N | | |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1900096
SCALE - NONE
REV LTR R
SHEET 31 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | 2 | T N 2 | FROM TERMINATION ITEM NO. | NO. | TO CIRCUIT POINT | 2 | TO TERMINATION ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|
| A 168E | | J9-A1 | 13N | | 14 | 9 | P6- 8 | 19N | 18 | 15 |
| A 168X | | J9-A2 | | 28 | | 9 | SHLD A168 | | | |
| A 169 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 169B | 3 | P6-10 | 19N | | 18 | 15 | SHLD A169 | 25N | | |
| A 169E | | J9-B1 | 13N | | 14 | 9 | P6- 9 | 19N | 18 | 15 |
| A 169X | | J9-B2 | | 28 | | 9 | SHLD A169 | | | |
| A 170 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 170B | 3 | P5-12 | 19N | | 18 | 43 | SHLD A170 | 25N | | |
| A 170E | | J9-C1 | 13N | | 14 | 9 | P5-61 | 19N | 18 | 43 |
| A 170X | | J9-C2 | | | 28 | 9 | SHLD A170 | | | |
| A 171 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 171B | 3 | P5-11 | 19N | | 18 | 43 | SHLD A171 | 25N | | |
| A 171E | | J9-D1 | 13N | | 14 | 9 | P5-55 | 19N | 18 | 43 |
| A 171X | | J9-D2 | | 28 | | 9 | SHLD A171 | | | |
| A 172 | 29 | | 56 | | A 30 | | | | A 10 | |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1900096
SCALE - NONE
REV LTR R
SHEET 32 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | 2 | T N 2 | FROM TERMINATION ITEM NO. | NO. | TO CIRCUIT POINT | 2 | TO TERMINATION ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 15 16 | | | | 5 6 | |
| A 172B | 3 | P5- 8 | 19N | | 18 | 43 | SHLD A172 | 25N | | |
| A 172E | | J9-E1 | 13N | | 14 | 9 | P5-57 | 19N | 18 | 43 |
| A 172X | | J9-E2 | | 28 | | 9 | SHLD A172 | | | |
| A 173 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 173B | 3 | P5- 6 | 19N | | 18 | 43 | SHLD A173 | 25N | | |
| A 173E | | J9-F1 | 13N | | 14 | 9 | P5-59 | 19N | 18 | 43 |
| A 173X | | J9-F2 | | 28 | | 9 | SHLD A173 | | | |
| A 174 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 174B | 3 | P5- 4 | 19N | | 18 | 43 | SHLD A174 | 25N | | |
| A 174E | | J9-G1 | 13N | | 14 | 9 | P5-49 | 19N | 18 | 43 |
| A 174X | | J9-G2 | | 28 | | 9 | SHLD A174 | | | |
| A 175 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 175B | 3 | P5- 2 | 19N | | 18 | 43 | SHLD A175 | 25N | | |
| A 175E | | J9-H1 | 13N | | 14 | 9 | P5-51 | 19N | 18 | 43 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1900096
SCALE - NONE
REV LTR R
SHEET 33 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | 2 | T N 2 | FROM TERMINATION ITEM NO. | NO. | TO CIRCUIT POINT | 2 | TO TERMINATION ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|
| A 175X | | J9-H2 | | 28 | | 9 | SHLD A175 | | | |
| A 176 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 176B | 3 | P3-11 | 19N | | 18 | 42 | SHLD A176 | 25N | | |
| A 176E | | J10-A1 | 13N | | 14 | 10 | P3-58 | 19N | 18 | 42 |
| A 176X | | J10-A2 | | 28 | | 10 | SHLD A176 | | | |
| A 177 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 177B | 3 | P3- 9 | 19N | | 18 | 42 | SHLD A177 | 25N | | |
| A 177E | | J10-B1 | 13N | | 14 | 10 | P3-50 | 19N | 18 | 42 |
| A 177X | | J10-B2 | | 28 | | 10 | SHLD A177 | | | |
| A 178 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |
| A 178B | 3 | P3- 7 | 19N | | 18 | 42 | SHLD A178 | 25N | | |
| A 178E | | J10-C1 | 19N | | 14 | 10 | P3-52 | 19N | 18 | 42 |
| A 178X | | J10-C2 | | 28 | | 10 | SHLD A178 | | | |
| A 179 | 29 | | 56N | | A 30 | | | | A 10 | |
| | | | | | 15 16 | | | | 5 6 | |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1900096
SCALE - NONE
REV LTR R
SHEET 34 OF 52

GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO | FROM CIRCUIT POINT | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | T N | TERMINATION SPEC ITEM NO | | NO. | TO CIRCUIT POINT | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | TERMINATION SPEC ITEM NO | | NO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 179B | 3 | P3- 5 | 19N | | 18 | | 42 | SHLD A179 | 25N | | | |
| A 179E | | J10-D1 | 13N | | 14 | | 10 | P3-54 | 19N | 18 | | 42 |
| A 179X | | J10-D2 | | 28 | | | 10 | SHLD A179 | | | | |
| A 180 | 29 | | 56N | | A | 30 | | | | A | 10 | |
| | | | | | 15 | 16 | | | | 5 | 6 | |
| A 180B | 3 | P3- 3 | 19N | | 18 | | 42 | SHLD A180 | 25N | | | |
| A 180E | | J10-E1 | 13N | | 14 | | 10 | P3-44 | 19N | 18 | | 42 |
| A 180X | | J10-E2 | | 28 | | | 10 | SHLD A180 | | | | |
| A 181 | 29 | | 56N | | A | 30 | | | | A | 10 | |
| | | | | | 15 | 16 | | | | 5 | 6 | |
| A 181B | 3 | P3- 1 | 19N | | 17 | | 42 | SHLD A181 | 25N | | | |
| A 181E | | J10-F1 | 13N | | 14 | | 10 | P3-46 | 19N | 17 | | 42 |
| A 181X | - | J10-F2 | | 28 | | | 10 | SHLD A181 | | | | |
| A 182 | 3 | J11- 1 | 19N | | 17 | | 20 | P1-25 | 19N | | | 40 |
| A 183 | 3 | J11- 2 | 19N | | 17 | | 20 | P3-24 | 19N | 17 | | 42 |
| A 184 | 3 | J11- 3 | 19N | | 17 | | 20 | P2-51 | 19N | | | 41 |
| A 185 | 3 | J11- 4 | 19N | | 17 | | 20 | P1-23 | 19N | | | 40 |
| A 186 | 3 | J11- 5 | 19N | | 17 | | 20 | P3-22 | 19N | 17 | | 42 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE - NONE | REV LTR R | SHEET 35 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO | FROM CIRCUIT POINT | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | TERMINATION SPEC ITEM NO | NO. | TO CIRCUIT POINT | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | TERMINATION SPEC ITEM NO | NO |
|---|---|---|---|---|---|---|---|---|---|
| A 187 | 3 | J11- 6 | 19N | 17 | 20 | P2-49 | 19N | | 41 |
| A 188 | 3 | J11- 7 | 19N | 17 | 20 | P1-21 | 19N | | 40 |
| A 189 | 3 | J11- 8 | 19N | 17 | 20 | P3-20 | 19N | 17 | 42 |
| A 190 | 3 | J11- 9 | 19N | 17 | 20 | P2-48 | 19N | | 41 |
| A 191 | 3 | J11-10 | 19N | 17 | 20 | P1-19 | 19N | | 40 |
| A 192 | 3 | J11-11 | 19N | 17 | 20 | P3-18 | 19N | 17 | 42 |
| A 193 | 3 | J11-12 | 19N | 17 | 20 | P2-44 | 19N | | 41 |
| A 194 | 3 | J11-13 | 19N | 17 | 20 | P1-17 | 19N | | 40 |
| A 195 | 3 | J11-14 | 19N | 17 | 20 | P3-16 | 19N | 17 | 42 |
| A 196 | 3 | J11-15 | 19N | 17 | 20 | P2-43 | 19N | | 41 |
| A 197 | 3 | J11-16 | 19N | 17 | 20 | P1-13 | 19N | | 40 |
| A 198 | 3 | J11-17 | 19N | 17 | 20 | P3-14 | 19N | 17 | 42 |
| A 199 | 3 | J11-18 | 19N | 17 | 20 | P2-39 | 19N | | 41 |
| A 200 | 3 | J11-19 | 19N | 17 | 20 | P1-11 | 19N | | 40 |
| A 201 | 3 | J11-20 | 19N | 17 | 20 | P3-12 | 19N | 17 | 42 |
| A 202 | 3 | J11-21 | 19N | 17 | 20 | P2- 6 | 19N | | 41 |
| A 203 | 3 | J11-22 | 19N | 17 | 20 | P1- 9 | 19N | | 40 |
| A 204 | 3 | J11-23 | 19N | 17 | 20 | P3-10 | 19N | 17 | 42 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE - NONE | REV LTR R | SHEET 36 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO | FROM CIRCUIT POINT | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | TERMINATION SPEC ITEM NO | NO. | TO CIRCUIT POINT | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | TERMINATION SPEC ITEM NO | NO |
|---|---|---|---|---|---|---|---|---|---|
| A 205 | 3 | J11-24 | 19N | 17 | 20 | P2- 5 | 19N | | 41 |
| A 206 | 3 | J11-25 | 19N | 17 | 20 | P1- 7 | 19N | | 40 |
| A 207 | 3 | J11-26 | 19N | 17 | 20 | P3- 8 | 19N | 17 | 42 |
| A 208 | 3 | J11-27 | 19N | 17 | 20 | P2- 4 | 19N | | 41 |
| A 209 | 3 | J11-28 | 19N | 17 | 20 | P1- 5 | 19N | | 40 |
| A 210 | 3 | J11-29 | 19N | 17 | 20 | P3- 6 | 19N | 17 | 42 |
| A 211 | 3 | J11-30 | 19N | 17 | 20 | P2- 3 | 19N | | 41 |
| A 212 | 3 | J11-31 | 19N | 17 | 20 | P1- 3 | 19N | | 40 |
| A 213 | 3 | J11-32 | 19N | 17 | 20 | P3- 4 | 19N | 17 | 42 |
| A 214 | 3 | J11-33 | 19N | 17 | 20 | P2- 2 | 19N | | 41 |
| A 215 | 3 | J11-34 | 19N | 17 | 20 | P1- 1 | 19N | | 40 |
| A 216 | 3 | J11-35 | 19N | 17 | 20 | P3- 2 | 19N | 17 | 42 |
| A 217 | 3 | J11-36 | 19N | 17 | 20 | P2- 1 | 19N | | 41 |
| A 218 | 3 | J11-37 | 19N | 17 | 20 | P1-61 | 19N | | 40 |
| A 219 | 3 | J11-38 | 19N | 17 | 20 | P3-61 | 19N | 17 | 42 |
| A 220 | 3 | J11-39 | 19N | 17 | 20 | P2-35 | 19N | | 41 |
| A 221 | | DELETED | | | | | | | |
| A 222 | 3 | J15-P | 25Y | 37 | 45 | P3-62 | 19N | 17 | 42 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE - NONE | REV LTR R | SHEET 37 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO | FROM CIRCUIT POINT | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | TERMINATION SPEC ITEM NO | NO. | TO CIRCUIT POINT | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | TERMINATION SPEC ITEM NO | NO |
|---|---|---|---|---|---|---|---|---|---|
| A 223 | | DELETED | | | | | | | |
| A 224 | 3 | J11-43 | 19N | 17 | 20 | P1-65 | 19N | | 40 |
| A 225 | 3 | J11-44 | 19N | 17 | 20 | P3-64 | 19N | 17 | 42 |
| A 226 | 3 | J11-45 | 19N | 17 | 20 | P2-27 | 19N | | 41 |
| A 227 | 3 | J11-46 | 19N | 17 | 20 | P1-55 | 19N | | 40 |
| A 228 | 3 | J11-47 | 19N | 17 | 20 | P3-66 | 19N | 17 | 42 |
| A 229 | 3 | J11-48 | 19N | 17 | 20 | P2-29 | 19N | | 41 |
| A 230 | 3 | J11-49 | 19N | 17 | 20 | P1-57 | 19N | | 40 |
| A 231 | 3 | J11-50 | 19N | 17 | 20 | P3-56 | 19N | 17 | 42 |
| A 232 | 3 | J11-51 | 19N | 17 | 20 | P2-19 | 19N | | 41 |
| A 236 | 3 | J12- 1 | 19N | 17 | 19 | P2-52 | 19N | 18 | 41 |
| A 237 | 3 | J12- 2 | 19N | 17 | 19 | P2-53 | 19N | 18 | 41 |
| A 238 | 3 | J12- 3 | 19N | 17 | 19 | P2-54 | 19N | 18 | 41 |
| A 239 | 3 | J12- 4 | 19N | 17 | 19 | P2-55 | 19N | 18 | 41 |
| A 240 | 3 | J12- 5 | 19N | 17 | 19 | P2-56 | 19N | 18 | 41 |
| A 241 | 3 | J12- 6 | 19N | 17 | 19 | P2-57 | 19N | 18 | 41 |
| A 242 | 3 | J12- 7 | 19N | 17 | 19 | P2-58 | 19N | 18 | 41 |
| A 243 | 3 | J12- 8 | 19N | 17 | 19 | P2-59 | 19N | 18 | 41 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE - NONE | REV LTR R | SHEET 38 OF 52

GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | FROM CIRCUIT POINT | FROM STRIP WIRE OR JACKET | FROM TERMINATION SPEC ITEM NO. | FROM NO. | TO CIRCUIT POINT | TO STRIP WIRE OR JACKET | TO TERMINATION SPEC ITEM NO. | TO NO. |
|---|---|---|---|---|---|---|---|---|---|---|
| A 244 | 3 | | J12- 9 | 19N | 17 | 19 | P2-60 | 19N | 18 | 41 |
| A 245 | 3 | | J12-10 | 19N | 18 | 19 | P7-38 | 19N | 17 | 16 |
| A 246 | 3 | | J12-11 | 19N | 18 | 19 | P2-61 | 19N | 18 | 41 |
| A 247 | 3 | | J12-11 | 19N | 18 | 19 | S2A- 1A | 25Y | | 30 |
| A 248 | 3 | | J12-12 | 19N | 18 | 19 | P2-62 | 19N | 18 | 41 |
| A 249 | 3 | | J12-12 | 19N | 18 | 19 | S2A- 3A | 25Y | | 30 |
| A 250 | 3 | | J12-16 | 19N | 18 | 19 | P3-48 | 19N | 18 | 42 |
| A 251 | 3 | | J12-17 | 19N | 18 | 19 | P3-37 | 19N | 18 | 42 |
| A 252 | 3 | | J12-18 | 19N | 18 | 19 | P3-38 | 19N | 18 | 42 |
| A 253 | 3 | | J12-19 | 19N | 18 | 19 | P3-39 | 19N | 18 | 42 |
| A 254 | 3 | | J12-20 | 19N | 18 | 19 | P3-40 | 19N | 18 | 42 |
| A 255 | 3 | | J12-21 | 19N | 18 | 19 | P3-41 | 19N | 18 | 42 |
| A 256 | 3 | | J12-22 | 19N | 18 | 19 | P3-42 | 19N | 18 | 42 |
| A 257 | 3 | | J12-23 | 19N | 18 | 19 | P3-32 | 19N | 18 | 42 |
| A 258 | 3 | | J12-24 | 19N | 18 | 19 | P3-33 | 19N | 18 | 42 |
| A 259 | 3 | | J12-26 | 19N | 18 | 19 | P3-34 | 19N | 17 | 42 |
| A 260 | 3 | | J12-27 | 19N | 18 | 19 | P3-31 | 19N | 17 | 42 |
| A 261 | 3 | | J12-28 | 19N | 18 | 19 | P5-40 | 19N | 17 | 43 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE - NONE | REV LTR R | SHEET 39 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | FROM CIRCUIT POINT | FROM STRIP WIRE OR JACKET | FROM TERMINATION SPEC ITEM NO. | FROM NO. | TO CIRCUIT POINT | TO STRIP WIRE OR JACKET | TO TERMINATION SPEC ITEM NO. | TO NO. |
|---|---|---|---|---|---|---|---|---|---|---|
| A 262 | 3 | | J12-29 | 19N | 18 | 19 | P5-18 | 19N | 17 | 43 |
| A 263 | 3 | | J12-30 | 19N | 18 | 19 | P7-10 | 19N | 17 | 16 |
| A 264 | 3 | | P1-14 | 19N | | 40 | P3-15 | 19N | 17 | 42 |
| A 265 | 3 | | P1-16 | 19N | | 40 | P3-17 | 19N | 17 | 42 |
| A 266 | 3 | | P1-18 | 19N | 18 | 40 | P3-19 | 19N | 17 | 42 |
| A 267 | 3 | | J15-X | 25Y | | 45 | P3-21 | 19N | 17 | 42 |
| A 268 | 3 | | P1-22 | 19N | | 40 | P3-23 | 19N | 17 | 42 |
| A 269 | 3 | | P1-24 | 19N | | 40 | P3-25 | 19N | 17 | 42 |
| A 270 | 3 | | P1-43 | 19N | | 40 | P3-45 | 19N | 17 | 42 |
| A 271 | 3 | | P1-44 | 19N | | 40 | P3-47 | 19N | 17 | 42 |
| A 272 | 1 | | | | A 10 | | | | A 10 | |
| | | | | | | | | | 7 8 | |
| A 272B | 4 | | E27 | 25N | | 11 | SHLD A272 | 25N | | |
| A 272L | | | P1-15 | 19N | 17 | 40 | K1- 7 | 25Y | 37 | 44 |
| A 272R | | | P1-50 | 19N | 17 | 40 | K1- 4 | 25Y | 37 | 44 |
| A 273 | 3 | | P1-52 | 19N | | 40 | P3-51 | 19N | 17 | 42 |
| A 274 | 3 | | P1-53 | 19N | | 40 | P3-53 | 19N | 17 | 42 |
| A 275 | 3 | | P1-54 | 19N | | 40 | P3-43 | 19N | 17 | 42 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE - NONE | REV LTR R | SHEET 40 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | FROM CIRCUIT POINT | FROM STRIP WIRE OR JACKET | FROM TERMINATION SPEC ITEM NO. | FROM NO. | TO CIRCUIT POINT | TO STRIP WIRE OR JACKET | TO TERMINATION SPEC ITEM NO. | TO NO. |
|---|---|---|---|---|---|---|---|---|---|---|
| A 276 | 3 | | P1-56 | 19N | | 40 | P3-57 | 19N | 17 | 42 |
| A 277 | | | P1-58 | 19N | | 40 | P3-59 | 19N | 17 | 42 |
| A 278 | | | P1-60 | 19N | | 40 | P3-49 | 19N | 17 | 42 |
| A 279 | 3 | | P1-62 | 19N | | 40 | P3-63 | 19N | 17 | 42 |
| A 280 | 3 | | P1-64 | 19N | | 40 | P3-65 | 19N | 17 | 42 |
| A 281 | 3 | | P1-66 | 19N | | 40 | P3-55 | 19N | 17 | 42 |
| A 282 | | | DELETED | | | | | | | |
| A 283 | 1 | | | | A 10 | | | | A 10 | |
| | | | | | | | | | 7 8 | |
| A 283B | 3 | | E27 | 25N | | 11 | SHLD A283 | 25N | | |
| A 283L | | | P2-40 | 19N | 17 | 41 | K1-13 | 25Y | 37 | 44 |
| A 283R | | | P2-21 | 19N | 17 | 41 | K1-10 | 25Y | 37 | 44 |
| A 284 | 3 | | P3-13 | 19N | 17 | 42 | P6-19 | 19N | 17 | 15 |
| A 285 | 3 | | P3-26 | 19N | 17 | 42 | S10SW2-NC | 25Y | | 26 |
| A 286 | 3 | | P3-32 | 19N | 18 | 42 | P5-38 | 19N | 17 | 43 |
| A 287 | 3 | | P3-33 | 19N | 18 | 42 | P5-39 | 19N | 17 | 43 |
| A 288 | 3 | | P3-37 | 19N | 18 | 42 | P5-44 | 19N | 17 | 43 |
| A 289 | 3 | | P3-38 | 19N | 18 | 42 | P5-45 | 19N | 17 | 43 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE - NONE | REV LTR R | SHEET 41 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | FROM CIRCUIT POINT | FROM STRIP WIRE OR JACKET | FROM TERMINATION SPEC ITEM NO. | FROM NO. | TO CIRCUIT POINT | TO STRIP WIRE OR JACKET | TO TERMINATION SPEC ITEM NO. | TO NO. |
|---|---|---|---|---|---|---|---|---|---|---|
| A 290 | 3 | | P3-39 | 19N | 18 | 42 | P5-46 | 19N | 17 | 43 |
| A 291 | 3 | | P3-40 | 19N | 18 | 42 | P5-47 | 19N | 17 | 43 |
| A 292 | 3 | | P3-41 | 19N | 18 | 42 | P5-48 | 19N | 17 | 43 |
| A 293 | 3 | | P3-42 | 19N | 18 | 42 | P5-37 | 19N | 17 | 43 |
| A 294 | 3 | | P3-48 | 19N | 18 | 42 | P5-43 | 19N | 17 | 43 |
| A 296 | | | P3-60 | 19N | 17 | 42 | P6-17 | 19N | 17 | 15 |
| A 297 | 3 | | P5-17 | 19N | 17 | 43 | S10SW2-NO | 25Y | | 26 |
| A 298 | 1 | | | | A 10 | | | | A 10 | |
| | | | | | | | | | 7 8 | |
| A 298B | 4 | | E27 | 25N | | 11 | SHLD A298 | 25N | | |
| A 298L | | | P5-10 | 19N | 17 | 43 | P6-20 | 19N | 17 | 15 |
| A 298R | | | P5-56 | 19N | 17 | 43 | P6-18 | 19N | 17 | 15 |
| A 299 | 2 | | | | 11 | | | | 5 6 10 | |
| A 299B | 4 | | E28 | 25N | | 33 | SHLD A299 | 25N | | |
| A 299W | | | P5-53 | 19N | 17 | 43 | XF2- 2 | 25Y | | 24 |
| A 300 | 1 | | | | A 10 | | | | A 10 | |
| | | | | | 7 8 | | | | | |
| A 300A | 4 | | SHLD A300 | 25N | | | E27 | 25N | | 11 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096
SCALE - NONE | REV LTR R | SHEET 42 OF 52

GFL WIRING HARNESS A R 1900096

| CONDUCTOR INDIVIDUAL LENGTH | | | FROM | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 T N | TERMINATION SPEC 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 T N | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 300L | | | P6-12 | 19N | 17 | 15 | S3A-11B | 25Y | | 39 |
| A 300R | | | P6-11 | 19N | 17 | 15 | S3A-11A | 25Y | | 39 |
| A 301 | 3 | | P6-15 | 19N | 17 | 15 | S10SW1-NO | 25Y | | 28 |
| A 302 | 3 | | P6-22 | 19N | 17 | 15 | S13SW3-NO | 25Y | | 27 |
| A 303 | 3 | | P6-23 | 19N | 17 | 15 | S12SW1-NO | 25Y | | 25 |
| A 304 | 3 | | P6-24 | 19N | 17 | 15 | S12SW1-NC | 25Y | | 25 |
| A 305 | 3 | | P6-25 | 19N | 17 | 15 | S12SW1-C | 25Y | | 25 |
| A 306 | 3 | | P6-26 | 19N | 17 | 15 | XDS6-A | 25Y | | 25 |
| A 307 | 3 | | P6-27 | 19N | 17 | 15 | S9SW1-NO | 25Y | | 25 |
| A 308 | 3 | | P6-28 | 19N | 18 | 15 | S9SW1-C | 25Y | | 25 |
| A 309 | 3 | | P6-46 | 19N | 18 | 15 | S10SW2-C | 25N | | 26 |
| A 310 | 3 | | P6-47 | 19N | 17 | 15 | S2A-5B | 25Y | | 30 |
| A 311 | 3 | | P6-52 | 19N | 17 | 15 | S7A-11A | 25Y | | 31 |
| A 312 | 3 | | P6-59 | 19N | 17 | 15 | S6A-11A | 25Y | | 32 |
| A 313 | 3 | | P6-58 | 19N | 17 | 15 | S5SW1-NC | 25Y | | 36 |
| A 314 | 3 | | P7- 1 | 19N | 18 | 16 | S6A- 2A | 25Y | | 32 |
| A 315 | 3 | | P7- 2 | 19N | 18 | 16 | S6A- 3A | 25Y | | 32 |
| A 316 | 3 | | P7- 3 | 19N | 18 | 16 | S6A- 4A | 25Y | | 32 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON TEXAS | SIZE A | 1900096

SCALE - NONE | REV LTR R | SHEET 43 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR INDIVIDUAL LENGTH | | | FROM | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 T N | TERMINATION SPEC. 1 ITEM NO | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 T N | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 317 | 3 | | P7- 4 | 19N | 18 | 16 | S6A- 5A | 25Y | | 32 |
| A 318 | 3 | | P7- 5 | 19N | 18 | 16 | S6A- 6A | 25Y | | 32 |
| A 319 | 3 | | P7- 6 | 19N | 18 | 16 | S6A- 7A | 25Y | | 32 |
| A 320 | 3 | | P7- 7 | 19N | 18 | 16 | S6A- 8A | 25Y | | 32 |
| A 321 | 3 | | P7- 8 | 19N | 18 | 16 | S6A- 9A | 25Y | | 32 |
| A 322 | 3 | | P7- 9 | 19N | 18 | 16 | S6A-10A | 25Y | | 32 |
| A 323 | 3 | | P7-29 | 19N | 17 | 16 | S7A-10A | 25Y | | 31 |
| A 324 | 3 | | P7-30 | 19N | 17 | 16 | S7A- 9A | 25Y | | 31 |
| A 325 | 3 | | P7-31 | 19N | 17 | 16 | S7A- 8A | 25Y | | 31 |
| A 326 | 3 | | P7-32 | 19N | 17 | 16 | S7A- 7A | 25Y | | 31 |
| A 327 | 9 | | P7-33 | 19N | 17 | 16 | S7A- 6A | 25Y | | 31 |
| A 328 | 3 | | P7-34 | 19N | 17 | 16 | S7A- 5A | 25Y | | 31 |
| A 329 | 3 | | P7-35 | 19N | 17 | 16 | S7A- 4A | 25Y | | 31 |
| A 330 | 3 | | P7-36 | 19N | 17 | 16 | S7A- 3A | 25Y | | 31 |
| A 331 | 3 | | P7-37 | 19N | 17 | 16 | S7A- 2A | 25Y | | 31 |
| A 332 | 1 | | | | A 10 | | | | A 10 | |
| | | | | | | | | | 7 8 | |
| A 332B | 4 | | E28 | 25N | | 33 | SHLD A332 | 25N | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE - NONE | REV LTR R | SHEET 44 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR INDIVIDUAL LENGTH | | | FROM | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 T N | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 T N | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 332L | | | S1A- 1B | 25Y | | 38 | S2B- 1B | 25Y | | 30 |
| A 332R | | | S1A- 1A | 25Y | | 38 | S2B- 1A | 25Y | | 30 |
| A 333 | 1 | | | | A 10 | | | | A 10 | |
| | | | | | | | | | 7 8 | |
| A 333A | 4 | | E28 | 25N | | 33 | SHLD A333 | 25N | | |
| A 333L | | | S1A- 3B | 25Y | | 38 | S2B- 3B | 25Y | | 30 |
| A 333R | | | S1A- 3A | 25Y | | 38 | S2B- 3A | 25Y | | 30 |
| A 334 | 3 | | S11B- 6A | 25Y | | 28 | S10SW2-C | 25Y | | 26 |
| A 335 | 1 | | | | A 10 | | | | A 10 | |
| | | | | | 7 8 | | | | | |
| A 335A | 4 | | SHLD A335 | 25N | | | E28 | 25N | | 33 |
| A 335L | | | S2B- 1B | 25Y | | 30 | S8A- 1B | 25Y | | 29 |
| A 335R | | | S2B- 1A | 25Y | | 30 | S8A- 1A | 25Y | | 29 |
| A 336 | 1 | | | | A 10 | | | | A 10 | |
| | | | | | 7 8 | | | | | |
| A 336A | 4 | | SHLD A336 | 25N | | | E28 | 25N | | 33 |
| A 336L | | | S2B- 3B | 25Y | | 30 | S8A- 3B | 25Y | | 29 |
| A 336R | | | S2B- 3A | 25Y | | 30 | S8A- 3A | 25Y | | 29 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE - NONE | REV LTR R | SHEET 45 OF 52

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GFL WIRING HARNESS A S 1900096

| CONDUCTOR INDIVIDUAL LENGTH | | | FROM | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 T N | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 T N | TERMINATION SPEC 1 ITEM NO. | NO |
| A 337 | 3 | | S4SW1-C | 25Y | | 37 | S4SW2-C | 25Y | | 37 |
| A 338 | 3 | | S13SW2-C | 25Y | | 27 | S13SW1-C | 25Y | | 27 |
| A 339 | 3 | | S4SW1-NO | 25Y | | 37 | XDS2-A | 25Y | | 37 |
| A 340 | 3 | | S4SW2-NO | 25Y | | 37 | S5SW1-C | 25Y | | 36 |
| A 341 | 3 | | S5SW1-C | 25Y | | 36 | S5SW2-C | 25Y | | 36 |
| A 342 | 3 | | S5SW2-NC | 25Y | | 36 | XDS3-A | 25Y | | 36 |
| A 343 | 3 | | S6A- 1A | 25Y | | 32 | XDS1-10 | 25Y | | 35 |
| A 344 | 3 | | S6A- 2A | 25Y | | 32 | XDS1- 1 | 25Y | | 35 |
| A 345 | 3 | | S6A- 3A | 25Y | | 32 | XDS1- 2 | 25Y | | 35 |
| A 346 | 3 | | S6A- 4A | 25Y | | 32 | XDS1- 3 | 25Y | | 35 |
| A 347 | 3 | | S6A- 5A | 25Y | | 32 | XDS1- 4 | 25Y | | 35 |
| A 348 | 3 | | S6A- 6A | 25Y | | 32 | XDS1- 5 | 25Y | | 35 |
| A 349 | 3 | | S6A- 7A | 25Y | | 32 | XDS1- 6 | 25Y | | 35 |
| A 350 | 3 | | S6A- 8A | 25Y | | 32 | XDS1- 7 | 25Y | | 35 |
| A 351 | 3 | | S6A- 9A | 25Y | | 32 | XDS1- 8 | 25Y | | 35 |
| A 352 | 3 | | S6A-10A | 25Y | | 32 | XDS1- 9 | 25Y | | 35 |
| A 353 | 3 | | S7A- 1A | 25Y | | 31 | XDS1-20 | 25Y | | 35 |
| A 354 | 3 | | S7A- 2A | 25Y | | 31 | XDS1-11 | 25Y | | 35 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE - NONE | REV LTR S | SHEET 46 OF 52

GFL WIRING HARNESS A S 1900096

| CONDUCTOR INDIVIDUAL LENGTH | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T/N | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T/N | TERMINATION SPEC 1 ITEM NO. | NO |
| A 355 | 3 | S7A- 3A | 25 | Y | | 31 | XDS1-12 | 25 | Y | | 35 |
| A 356 | 3 | S7A- 4A | 25 | Y | | 31 | XDS1-13 | 25 | Y | | 35 |
| A 357 | 3 | S7A- 5A | 25 | Y | | 31 | XDS1-14 | 25 | Y | | 35 |
| A 358 | 3 | S7A- 6A | 25 | Y | | 31 | XDS1-15 | 25 | Y | | 35 |
| A 359 | 3 | S7A- 7A | 25 | Y | | 31 | XDS1-16 | 25 | Y | | 35 |
| A 360 | 3 | S7A- 8A | 25 | Y | | 31 | XDS1-17 | 25 | Y | | 35 |
| A 361 | 3 | S7A- 9A | 25 | Y | | 31 | XDS1-18 | 25 | Y | | 35 |
| A 362 | 3 | S7A-10A | 25 | Y | | 31 | XDS1-19 | 25 | Y | | 35 |
| A 363 | 3 | S9SW2-C | 25 | Y | | 25 | S4SW2-C | 25 | Y | | 37 |
| A 364 | 3 | S9SW2-C | 25 | Y | | 25 | S10SW1-C | 25 | Y | | 26 |
| A 365 | 3 | S9SW2-NO | 25 | Y | | 25 | S12SW1-C | 25 | Y | | 25 |
| A 366 | 3 | S9SW2-NO | 25 | Y | | 25 | XDS4-A | 25 | Y | | 25 |
| A 367 | 3 | S10SW1-C | 25 | Y | | 26 | S11- 6A | 25 | Y | | 28 |
| A 368 | 3 | S10SW1-NO | 25 | Y | | 26 | XDS5-A | 25 | Y | | 26 |
| A 369 | 3 | S10SW1-NC | 25 | Y | | 26 | XDS5-B | 25 | Y | | 26 |
| A 370 | 3 | S4SW1-C | 25 | Y | | 37 | XF1- 2 | 25 | Y | | 22 |
| A 371 | 3 | XF1- 2 | 25 | Y | | 22 | XDS7-B | 25 | Y | | 27 |
| A 372 | 3 | S13SW2-C | 25 | Y | | 27 | S13SW3-C | 25 | Y | | 27 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE - NONE | REV LTR S | SHEET 47 OF 52

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GFL WIRING HARNESS A S 1900096

| CONDUCTOR INDIVIDUAL LENGTH | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T/N | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T/N | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 373 | 3 | S13SW1-NO | 25 | Y | | 27 | XDS7-G | 25 | Y | | 27 |
| A 374 | 3 | XDS1-G | 25 | Y | 20 | 34 | XDS2-G | 25 | Y | | 37 |
| A 375 | 3 | XDS1-G | 25 | Y | | 34 | XDS3-G | 25 | Y | | 26 |
| A 376 | 3 | XDS2-A | 25 | Y | | 37 | XDS2-C | 25 | Y | | 37 |
| A 377 | 3 | XDS2-G | 25 | Y | | 37 | XDS3-G | 25 | Y | | 36 |
| A 378 | 3 | XDS3-A | 25 | Y | | 36 | XDS3-C | 25 | Y | | 36 |
| A 379 | 3 | XDS3-G | 25 | Y | | 36 | XDS4-G | 25 | Y | | 25 |
| A 380 | 3 | XDS4-A | 25 | Y | | 25 | XDS4-C | 25 | Y | | 25 |
| A 381 | 3 | XDS4-G | 25 | Y | | 25 | XDS6-G | 25 | Y | | 25 |
| A 382 | 3 | XDS5-A | 25 | Y | | 26 | XDS5-D | 25 | Y | | 26 |
| A 383 | 3 | XDS5-B | 25 | Y | | 26 | XDS5-C | 25 | Y | | 26 |
| A 384 | 3 | XDS5-G | 25 | Y | | 26 | S13SW3-C | 25 | Y | | 27 |
| A 385 | 3 | XDS6-A | 25 | Y | | 25 | XDS6-C | 25 | Y | | 25 |
| A 386 | 3 | XDS6-G | 25 | Y | | 25 | P6-57 | 19 | N | 18 | 15 |
| A 387 | 3 | XDS7-B | 25 | Y | | 27 | XDS7-C | 25 | Y | | 27 |
| A 388 | 4 | E3 | 25 | N | | 12 | E2 | 25 | N | | 18 |
| A 389 | 4 | E4 | 25 | N | | 13 | E2 | 25 | N | | 18 |
| A 390 | 4 | E5 | 25 | N | | 14 | E2 | 25 | N | | 18 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE - NONE | REV LTR S | SHEET 48 OF 52

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GFL WIRING HARNESS A R 1900096

| CONDUCTOR INDIVIDUAL LENGTH | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T/N | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T/N | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 412 | 4 | E27 | 25 | N | | 11 | E2 | 25 | N | | 18 |
| A 413 | 4 | E28 | 25 | N | | 33 | E2 | 25 | N | | 18 |
| A 418 | 4 | P6-59 | 19 | N | | 15 | E27 | 25 | N | | 11 |
| A 419 | 3 | S2A-2A | 25 | Y | | 30 | S2A-4A | 25 | Y | | 30 |
| A 420 | 29 | | | | A 30 | | | | | A 10 | |
| | | | | | 15 16 | | | | | 5 6 | |
| A 420B | 3 | P5-16 | 19 | N | 18 | 43 | SHLD A420 | 25 | N | | |
| A 420E | | J4-H1 | 13 | N | 14 | 4 | P5-65 | 19 | N | 18 | 43 |
| A 420X | | J4-H2 | | | 28 | 4 | SHLD A420 | | | | |
| A 421 | 3 | S11B-3A | 25 | Y | | 28 | P2-63 | 19 | N | 17 | 41 |
| A 422 | 3 | S11B-5A | 25 | Y | | 28 | S2A-5A | 25 | Y | | 30 |
| A 423 | 3 | P7-39 | 19 | N | 17 | 16 | J11-52 | 19 | N | 17 | 20 |
| A 424 | 3 | P7-40 | 19 | N | 17 | 16 | J11-54 | 19 | N | 17 | 20 |
| A 425 | 3 | P6-43 | 19 | N | 17 | 15 | J11-55 | 19 | N | 17 | 20 |
| A 426 | 3 | P7-41 | 19 | N | 17 | 16 | J11-56 | 19 | N | 17 | 20 |
| A 427 | 3 | P7-42 | 19 | N | 17 | 16 | J11-57 | 19 | N | 17 | 20 |
| A 428 | 3 | P6-44 | 19 | N | 17 | 15 | J11-58 | 19 | N | 17 | 20 |
| A 429 | 3 | S1A-2A | 25 | Y | | 38 | S1A-2B | 25 | Y | | 38 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON TEXAS | SIZE A | 1900096

SCALE - NONE | REV LTR R | SHEET 49 OF 52

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GFL WIRING HARNESS A T 1900096

| CONDUCTOR INDIVIDUAL LENGTH | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T/N | TERMINATION SPEC 1 ITEM NO | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T/N | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 430 | 3 | S2B-2A | 25 | Y | | 30 | S2B-2B | 25 | Y | | 30 |
| A 431 | 3 | S8A-2A | 25 | Y | | 29 | S8A-2B | 25 | Y | | 29 |
| A 432 | 3 | P3-30 | 19 | N | 17 | 42 | S10SW3-NC | 25 | Y | | 26 |
| A 433 | 3 | P5-24 | 19 | N | 17 | 43 | S10SW3-NO | 25 | Y | | 26 |
| A 434 | 3 | S10SW2-C | 19 | N | | 2 | S10SW3-C | 25 | Y | | 26 |
| A 435 | 3 | S13SW4-NC | 25 | Y | | 27 | P6-28 | 19 | N | 17 | 15 |
| A 436 | 3 | S9SW3-NO | 25 | Y | | 25 | XDS7-A | 25 | Y | | 27 |
| A 437 | 3 | XDS7-A | 25 | Y | | 27 | XDS7-D | 25 | Y | | 27 |
| A 438 | 3 | K1- 3 | 25 | Y | 37 | 44 | J14-B | 25 | Y | | 45 |
| A 439 | 3 | K1- 5 | 25 | Y | 37 | 44 | P6- 1 | 19 | N | 17 | 15 |
| A 440 | 3 | K1- 6 | 25 | Y | 37 | 44 | K1-12 | 25 | Y | | 44 |
| A 441 | 3 | K1- 8 | 25 | Y | 37 | 44 | P6- 2 | 19 | N | 17 | 15 |
| A 442 | 3 | K1- 9 | 25 | Y | 37 | 44 | J15-A | 25 | Y | | 45 |
| A 443 | 3 | K1-11 | 25 | Y | 37 | 44 | P6- 5 | 19 | N | 17 | 15 |
| A 444 | 3 | K1-12 | 25 | Y | 37 | 44 | J15-X | 25 | Y | | 45 |
| A 445 | 3 | K1-14 | 25 | Y | 37 | 44 | P6- 6 | 19 | N | 17 | 15 |
| A 446 | 3 | K1-15 | 25 | Y | 37 | 44 | J15-W | 25 | Y | 37 | 45 |
| A 447 | 3 | K1-16 | 25 | Y | 37 | 44 | J3-X | 19 | N | | 3 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096

SCALE - NONE | REV LTR | SHEET 50 OF 52

GFL WIRING HARNESS A T 1900096

| CONDUCTOR INDIVIDUAL LENGTH |  |  | FROM |  |  |  |  | TO |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2> | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2> | TIN | TERMINATION SPEC. 1> ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2> | TIN | TERMINATION SPEC 1> ITEM NO. | NO. |  |
| A 448 | 3 |  | K1-18 | 25 | Y | 37 | 44 | J15-Y | 25 | Y | 37 | 45 |  |
| A 449 | 3 |  | K1-19 | 25 | Y | 37 | 44 | J3-Z | 19 | N |  | 3 |  |
| A 450 | 3 |  | K1- 1 | 25 | Y | 37 | 44 | S11A-6A | 25 | Y |  | 28 |  |
| A 451 | 3 |  | K1- 2 | 25 | Y | 37 | 44 | P3-29 | 19 | N | 17 | 42 |  |
| A 452 | 3 |  | S13SW2-C | 25 | Y |  | 27 | P3-28 | 19 | N | 17 | 42 |  |
| A 453 | 3 |  | J3-Y | 19 | N |  | 3 | K1- 6 | 25 | Y |  | 44 |  |
| A 454 | 3 |  | S9SW2-C | 25 | Y |  | 25 | S9SW3-C | 25 | Y |  | 25 |  |

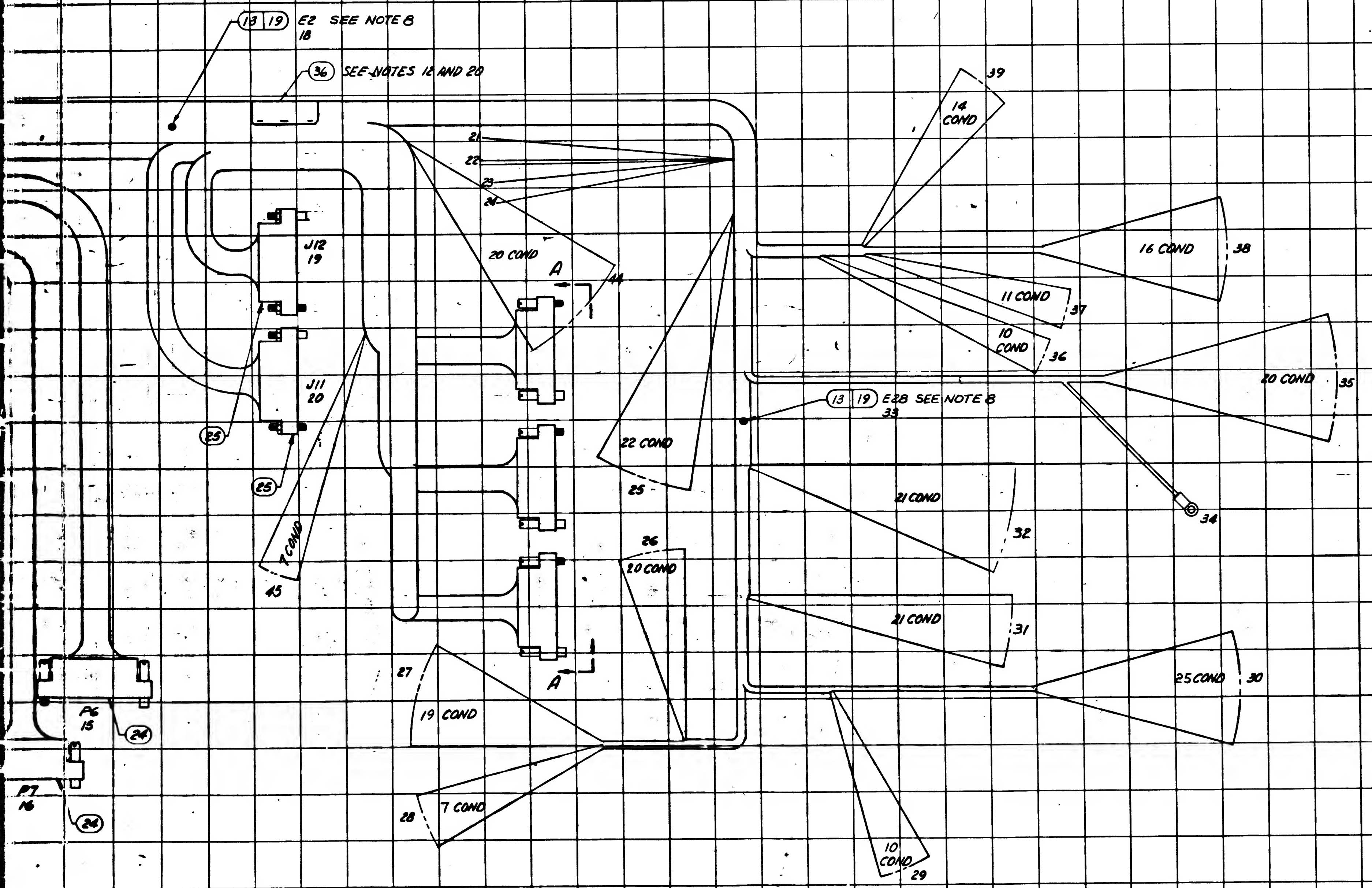
1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

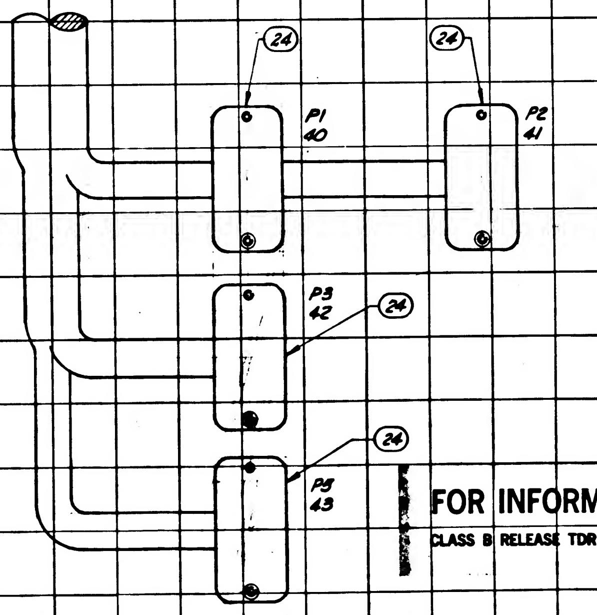
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

| MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900096 |
|---|---|---|
| SCALE - NONE | REV LTR T | SHEET 51 OF 52 |

| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
|---|---|---|---|---|---|
| M H | | THIS SHEET ADDED PER TDRR 44869 | | 3 Jan 63 | |

FOR ADDITIONAL REVISION RECORD
SEE SHEET 1





PARTIAL VIEW AA

**FOR INFORMATION ONLY**
CLASS B RELEASE TDR No. 01801 DATE 2 July 63

| NEXT ASSY | USED ON |
|---|---|
| 1900057-011 | 1900057-011 |

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN 8 OCT 63
CHECKED 10 OCT 63
APPROVAL 15 OCT 63
APPROVAL 12/2/63
NASA APPROVAL W. J. 12.3.63
MIT APPROVAL 12/2/63

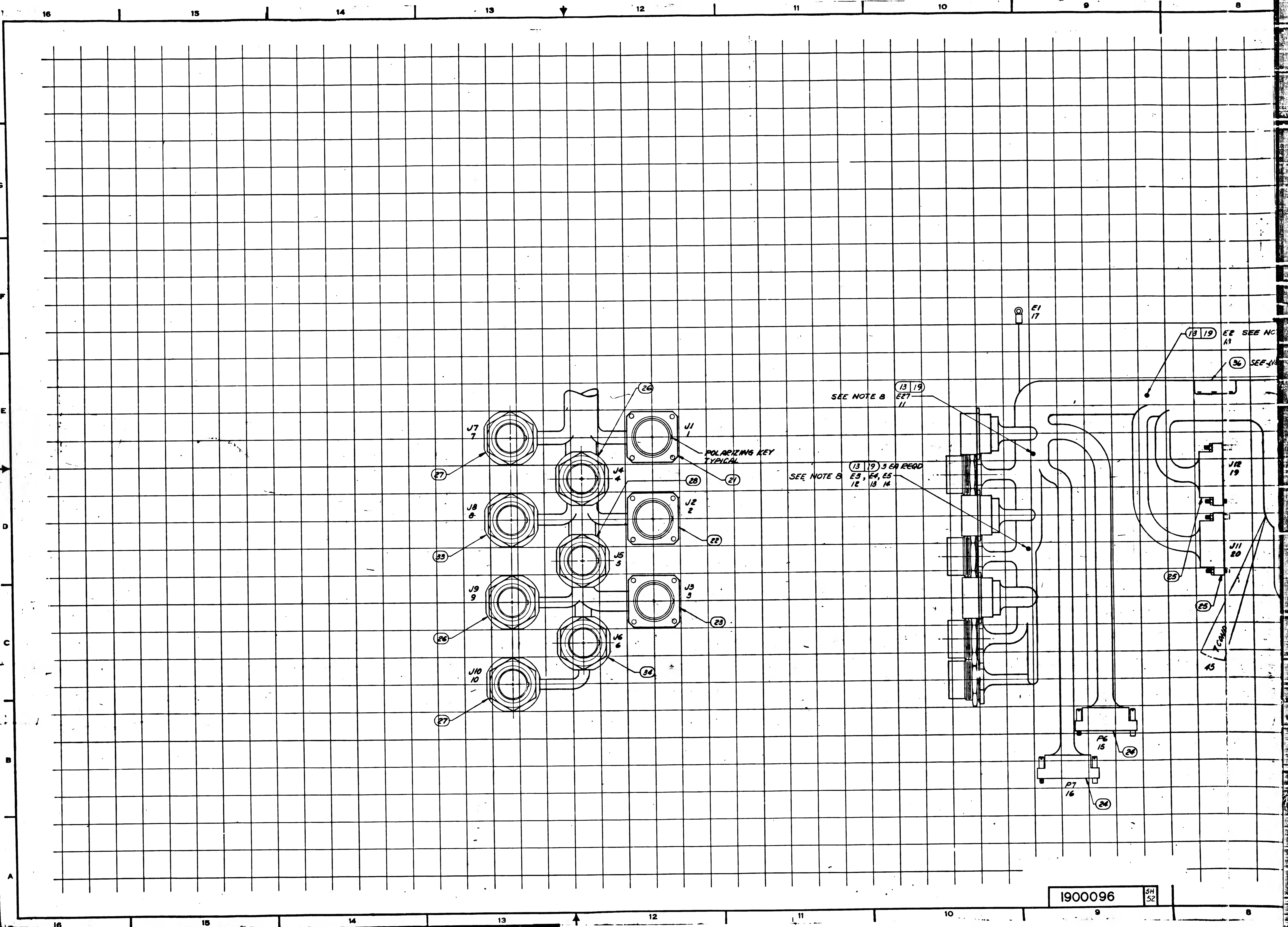
MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS A

CODE IDENT NO
SIZE J2
1900096
SCALE 1/1
SHEET 52 OF 52

1900096 SH 52

2/1900096



1900096 SH 52

1/1900096

REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
|---|---|---|---|---|---|
| | | | | | |

PICTURE INCOMPLETE

**FOR INFORMATION ONLY**

**CLASS B RELEASE TDR No.** 01801 **DATE** July 63

| ITEM NO. | NO. REQD | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|
| | 70 | 1015908-51 | HYRING |
| | 70 | 1015908-31 | OUTER FEMALE BODY |
| | 70 | 1015908-11 | COAXIAL, PIN CONTACT |
| | 1 | 1015906-104 | |
| | 1 | 1015906-103 | |
| | 1 | 1015906-102 | |
| | 2 | 1015906-101 | |
| | 2 | 1015906-100 | RECEP, ELEC |
| | 7 | 1015818-660 | PLUG, ELEC |
| | 2 | 1015867-660 | RECEP, ELEC |
| | 400 | 1015818-424 | SOCKET CONTACTS |
| | 1 | MS3127E-24-61PX | |
| | 1 | MS3127E-24-61PW | |
| | 1 | MS3127E-24-61P | CONNECTOR, RECEP, ELEC |
| | 1 | 1900096-1 | WIRE - MIL-W-16878C, 24 AWG, WHT |

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON |
|---|---|
| 1900057-011 | 1900057-011 |

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN R W Heisel DATE 17 JUN 63
CHECKED W. Diehl 17 Jun 63
APPROVAL W F AmBry 17 Jun 63
APPROVAL J Gilmore [illegible] July 63
NASA APPROVAL 7/2/63
MIT APPROVAL [illegible] 2 July 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRING HARNESS "A"

CODE IDENT NO.
SIZE C
1900096
SCALE —
SHEET —

MIL 1077C—P

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

1900097 A

| (A) SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
|---|---|---|---|---|---|
| A | | REPLACED WITH CHANGE BY REV. B PER MXC-190879 | | 15 OCT 63 | |
| | | REVISED PER TDR 04421 | | 5 NOV 63 | |

PICTURE INCOMPLETE

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 02083 DATE 17 July 63

Ⓐ REPLACED WITH CHANGE BY REV B

| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | 1 | | | | SLEEVE, IDENT. |
| | | | 1 | | | | |
| | | | 1 | | | | |
| | | | 1 | | | | |
| | | | 1 | | | | |
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| | | | 1 | | | | |
| | | | 1 | | | | |
| | | | 1 | | | | |
| | | | 660 | | | 1015818-424 | CONTACT, PIN |
| | | | 3 | | | 1015867-200 | CONNECTOR, RECEP. |
| | | | 3 | | | 1015867-140 | CONNECTOR, RECEP. |
| | | | 10 | | | 1015818-660 | CONNECTOR, PLUG |
| | | | 1 | | | MS3127E24-61PZ | CONNECTOR, RECEP. |
| | | | 1 | | | MS3127E24-61PY | |
| | | | 2 | | | MS3127E24-61PX | |
| | | | 1 | | | MS3127E24-61PW | |
| | | | 2 | | | MS3127E24-61P | |
| | | | 1 | | | 1900097-001 | WIRE |

QUANTITY REQUIRED

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900056-011 | 1900004 | |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-947

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN L. Sommer DATE 2 JUL 63
CHECKED 2 JUL 63
APPROVAL A. Smith 2 Jul 63
APPROVAL 10 July 63
NASA APPROVAL 7/17/63
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRE HARNESS "A"
OSCILL. SIGNAL SELECTOR

CODE IDENT NO.
SIZE D
1900097
SCALE
SHEET

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

| APPLICATION | | REVISIONS | | | |
|---|---|---|---|---|---|
| NEXT ASSY | USED ON | SYM | DESCRIPTION | DATE | APPROVAL |
| 1900056-011 | 1900056-011 | B | REPLACES REV. A WITH CHANGE PER MXC-190879<br>REVISED PER TDR 04621 | 15 OCT 63<br>5 NOV 63 | |

**FOR INFORMATION ONLY**

**CLASS B RELEASE TDR No.** 02083 **DATE** 7/31/63

Ⓑ

REPLACES REV A WITH CHANGE

| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | REV | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B |
| | SHEET | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 |
| REV STATUS | REV | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | | | |
| OF SHEETS | SHEET | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | | | |

AC SPARK PLUG DIVISION , GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN Gaschke DATE 19 SEP 63
CHECKED Y. Molye 2 Oct. 63
APPROVAL W. Farley 2 OCT 63
APPROVAL C. Gelman Nov 4 1963
NASA APPROVAL Barnard
MIT APPROVAL W. Kupfer 5 Nov 63
CONTRACT NAS9-497

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRE HARNESS A

CODE IDENT NO. | SIZE | 1900097 | REV B
SCALE FULL | SHEET 1 OF 78

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## REVISION STATUS OF SHEETS

| SH | REV | SH | REV | SH | REV | SH | REV | SH | REV | SH | REV | SH | REV | SH | REV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 | B | | | | | | | | | | | | | | |
| 51 | B | | | | | | | | | | | | | | |
| 52 | B | | | | | | | | | | | | | | |
| 53 | B | | | | | | | | | | | | | | |
| 54 | B | | | | | | | | | | | | | | |
| 55 | B | | | | | | | | | | | | | | |
| 56 | B | | | | | | | | | | | | | | |
| 57 | B | | | | | | | | | | | | | | |
| 58 | B | | | | | | | | | | | | | | |
| 59 | B | | | | | | | | | | | | | | |
| 60 | B | | | | | | | | | | | | | | |
| 61 | B | | | | | | | | | | | | | | |
| 62 | B | | | | | | | | | | | | | | |
| 63 | B | | | | | | | | | | | | | | |
| 64 | B | | | | | | | | | | | | | | |
| 65 | B | | | | | | | | | | | | | | |
| 66 | B | | | | | | | | | | | | | | |
| 67 | B | | | | | | | | | | | | | | |
| 68 | B | | | | | | | | | | | | | | |
| 69 | B | | | | | | | | | | | | | | |
| 70 | B | | | | | | | | | | | | | | |
| 71 | B | | | | | | | | | | | | | | |
| 72 | B | | | | | | | | | | | | | | |
| 73 | B | | | | | | | | | | | | | | |
| 74 | B | | | | | | | | | | | | | | |
| 75 | B | | | | | | | | | | | | | | |
| 76 | B | | | | | | | | | | | | | | |
| 77 | B | | | | | | | | | | | | | | |
| 78 | B | | | | | | | | | | | | | | |

MANNED
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HOUSTON, TEXAS

REVISION B

NASA DRAWING NO.
1900097
SHEET 2 OF 78

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PENNANT NOTE

## GENERAL NOTES

1 SEE CONDUCTOR CHART

2 SEE CONDUCTOR CHART

3 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

4 MARK CONDUCTOR IDENTIFICATION PER ND1002019.

5 MARK CONDUCTOR IDENTIFICATION ON SINGLE CONDUCTORS PER ND1002019 OMITTING ALL SUFFIX LETTERS EXCEPT A AND B.

6 SPACING OF CONDUCTOR IDENTIFICATION SHALL BE EVERY 1.2 INCHES.

7 SPIRALLING OF THE MARKING IS ALLOWED.

8 MARK SLEEVING WITH REFERENCE DESIGNATION AS SHOWN .12 INCH HIGH. COLOR BLACK PER ND1002019.

9 MARK SLEEVING OF MULTI-CONDUCTORS WITH THE CONDUCTOR NUMBER .12 INCH HIGH, COLOR BLACK, PER ND1002019 WHEN SLEEVING ITEM NUMBERS FOLLOW AN A OR T IN THE ACCESSORIES ITEM NUMBER FIELD.

10 A OR T PREFIX IN THE ACCESSORIES ITEM NUMBER COLUMN INDICATES THE READING POSITION AWAY FROM TERMINATION OR TOWARD TERMINATION RESPECTIVELY, OF THE WIRE MARKER SLEEVE.

11 LACE HARNESS USING ITEM 29.

12 IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (ES-267).

13 SOLDER PER MIL-STD-440 USING ITEMS 27 AND 28.

14 Y OR N IN TINNED COLUMN INDICATES YES OR NO.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900097
SCALE-NONE | REV LTR B | SHEET 3 OF 78

MIL 2084 4-63

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PENNANT NOTE

## GENERAL NOTES

15 A LETTER WITH AN ASTERISK SUFFIX, INDICATES A LOWER CASE LETTER.

16 GRID MODULE IS 1 INCH.

17 UNLESS OTHERWISE SPECIFIED ---
FEATURE CENTERLINES ARE LOCATED WITHIN + OR - .25 INCH.
END OF HOOKUP WIRES OR ACCESSORIES ARE LOCATED WITHIN + OR - .12 INCH.

18 VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.

19 FASTEN MARKER SECURELY WITH ITEM 29 . WRAP MARKER TO CONFORM TO CABLE CONFIGURATION.

20 THE SUFFIX LETTER OF A CONDUCTOR IDENTIFICATION NUMBER INDICATES CONDUCTOR SHIELDING, COLOR, OR MARKING.
A - FROM END SHIELD
B - TO END SHIELD
L - WHITE WITH BLUE TRACER
R - WHITE WITH RED TRACER

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900097
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INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

LIST OF MATERIALS

| PENNANT NOTE | ITEM | QTY | PART NO | DESCRIPTION |
|---|---|---|---|---|
| | 1 | 1 | 1900097-001 | WIRE ND1002181 CLASS 4 TYPE 2 24AWG (WHITE/RED, WHITE/BLUE) 527 FT TOTAL LENGTH |
| | 2 | 1 | 1900097-002 | WIRE ND1002181 CLASS 4 TYPE 1 24AWG (WHITE) 21 FT TOTAL LENGTH |
| | 3 | 1 | 1900097-003 | WIRE ND1002181 CLASS 1 TYPE 1 24AWG (WHITE) 146 FT TOTAL LENGTH |
| | 4 | 1 | 1900097-004 | WIRE ND1002181 CLASS 1 TYPE 1 22AWG (WHITE) 110 FT TOTAL LENGTH |
| 18 | 5 | 1 | 1015902- 46 | TERMINAL LUG |
| 18 | 6 | 6 | 1000243-003 | FERRULE, ELECTRICAL CONDUCTOR (INNER) |
| 18 | 7 | 6 | 1000242-004 | FERRULE, ELECTRICAL CONDUCTOR (OUTER) |
| 18 | 8 | 213 | 1000243-008 | FERRULE, ELECTRICAL CONDUCTOR (INNER) |
| 18 | 9 | 213 | 1000242-008 | FERRULE, ELECTRICAL CONDUCTOR (OUTER) |
| | 10 | 213 | 1010490-196 | INSULATION SLEEVE, ELECTRICAL (HEAT SHRINK) |
| | 11 | 219 | 1010490-198 | INSULATION SLEEVE, ELECTRICAL (HEAT SHRINK) |
| | 12 | 11 | 1010490-200 | INSULATION SLEEVE, ELECTRICAL (HEAT SHRINK) |
| | 13 | 49 | 1010490-258 | INSULATION SLEEVE, ELECTRICAL (HEAT SHRINK) |
| | 14 | 49 | 1016006-002 | SPLICE REDUCER, ELEC COND, CRIMP STYLE, COPPER |
| 18 | 15 | 3 | 1015867-140 | CONNECTOR RECEP ELEC |
| 18 | 16 | 3 | 1015867-200 | CONNECTOR RECEP ELEC |

MANNED SPACECRAFT CENTER
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SHEET 6 OF 78

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LIST OF MATERIALS

| PENNANT NOTE | ITEM | QTY | PART NO | DESCRIPTION |
|---|---|---|---|---|
| 18 | 17 | 10 | 1015818-660 | CONNECTOR PLUG ELEC |
| 18 | 18 | 453 | 1015818-424 | CONNECTOR SOCKET CONTACTS |
| 18 | 19 | 22 | 1015818-420 | CONNECTOR SOCKET CONTACTS |
| | 20 | 5 | 1016006-001 | SPLICE REDUCER, ELEC COND, CRIMP STYLE, COPPER |
| 18 | 21 | 8 | 1015864-109 | INSULATION SLEEVE, ELECTRICAL |
| | 22 | 2 | MS3127E-24-61PX | CONNECTOR RECEP ELEC |
| | 23 | 2 | MS3127E-24-61P | CONNECTOR RECEP ELEC |
| | 24 | 1 | MS3127E-24-61PY | CONNECTOR RECEP ELEC |
| | 25 | 1 | MS3127E-24-61PW | CONNECTOR RECEP ELEC |
| | 26 | 1 | MS3127E-24-61PZ | CONNECTOR RECEP ELEC |
| | 27 | AR | QQ-S-571 | SOLDER SN60 (ES-2175 ALLOY 1) |
| | 28 | AR | QQ-S-571 | FLUX TYPE AR (ES-2175 TYPE 1 OR 2) OR MIL-F-14256 FLUX (ES-2798) |
| | 29 | AR | MIL-T-713 | LACING TAPE, TYPE P, CLASS 2, BLACK (ES-2732, NO. 18) |
| | 30 | 1 | | BAND, IDENTIFICATION BLANK |

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PENNANT NOTE

GENERAL NOTES

TOLERANCE CHART, UNLESS OTHERWISE SPECIFIED ---

| APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD. | WIRE OR CABLE | STRIP WIRE | STRIP JACKET | CUT WIRE | CUT SHIELD |
|---|---|---|---|---|---|
| UNDER 1 INCH | + .06-.00 | +.03-.00 | +.06-.06 | +.06-.06 | +.06-.06 |
| 1 INCH TO 6 INCHES | + .50-.00 | +.06-.00 | +.25-.25 | +.25-.25 | +.25-.25 |
| 6 INCHES TO 6 FEET | +1.00-.00 | | +.50-.50 | +.50-.50 | +.50-.50 |
| OVER 6 FEET | +2.00-.00 | | | | |

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| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | 2 | T I N | FROM TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | 2 | T I N | TO TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A 1 | 3 | J1-A | 19 | N | | 5 | E1 | 25 | N | 5 | |
| A 2 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 2A | 4 | SHLD A2 | 25 | N | | | E2 | 25 | N | 14 13 | |
| A 2L | | J1-B | 19 | N | | 5 | J8-J | 19 | N | 19 | 11 |
| A 2R | | J1-C | 19 | N | | 5 | J8-H | 19 | N | 19 | 11 |
| A 3 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 3A | 4 | SHLD A3 | 25 | N | | | E2 | 25 | N | | |
| A 3L | | J1-D | 19 | N | | 5 | J11-J | 19 | N | 19 | 21 |
| A 3R | | J1-E | 19 | N | | 5 | J11-H | 19 | N | 19 | 21 |
| A 4 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 4A | 4 | SHLD A4 | 25 | N | | | E2 | 25 | N | | |
| A 4L | | J1-F | 19 | N | | 5 | J10-J | 19 | N | 18 | 16 |
| A 4R | | J1-G | 19 | N | | 5 | J10-H | 19 | N | 18 | 16 |
| A 5 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
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1900097
SCALE - NONE
REV LTR B
SHEET 8 OF 78

MIL 2085 - 4-63 WIR

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

GCF WIRE HARNESS A B 1900097

| CONDUCTOR | | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 15A | 4 | | SHLD A15 | 25 | N | | | E2 | 25 | N | | |
| A 15L | | | J1-C* | 19 | N | | 5 | S7- 6B | 25 | Y | | 23 |
| A 15R | | | J1-B* | 19 | N | | 5 | S7- 6A | 25 | Y | | 23 |
| A 16 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 16A | 4 | | SHLD A16 | 25 | N | | | E2 | 25 | N | | |
| A 16L | | | J1-E* | 19 | N | | 5 | J11-R | 19 | N | 18 | 21 |
| A 16R | | | J1-D* | 19 | N | | 5 | J11-P | 19 | N | 18 | 21 |
| A 17 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 17A | 4 | | SHLD A17 | 25 | N | | | E3 | 25 | N | 14 13 | |
| A 17L | | | J1-G* | 19 | N | | 5 | S7- 3B | 25 | Y | | 23 |
| A 17R | | | J1-F* | 19 | N | | 5 | S7- 3A | 25 | Y | | 23 |
| A 18 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 18A | 4 | | SHLD A18 | 25 | N | | | E3 | 25 | N | | |
| A 18L | | | J1-J* | 19 | N | | 5 | S7- 4B | 25 | Y | | 23 |
| A 18R | | | J1-H* | 19 | N | | 5 | S7- 4A | 25 | Y | | 23 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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CENTER
HOUSTON, TEXAS

SIZE A 1900097

SCALE-NONE REV LTR B SHEET 10 OF 78

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR | | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 19 | 3 | | J1-M* | 19 | N | | 5 | S1SW1-NO | 25 | Y | | 24 |
| A 20 | 3 | | J1-N* | 19 | N | | 5 | S2SW1-NO | 25 | Y | | 26 |
| A 21 | 3 | | J1-P* | 19 | N | | 5 | S4SW1-NO | 25 | Y | | 35 |
| A 22 | 4 | | J1-Q* | 19 | N | | 5 | E51 | 25 | N | | 43 |
| A 23 | 3 | | J1-R* | 19 | N | | 5 | S5SW1-NO | 25 | Y | | 33 |
| A 24 | 4 | | J1-S* | 19 | N | | 5 | XF1- 1 | 25 | Y | | 51 |
| A 25 | 4 | | J1-T* | 19 | N | | 5 | E55 | 25 | N | 14 13 | 43 |
| A 26 | 3 | | J1-U* | 19 | N | | 5 | P1-35 | 19 | N | 18 | 46 |
| A 27 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 27A | 4 | | SHLD A27 | 25 | N | | | E3 | 25 | N | | |
| A 27L | | | J1-X* | 19 | N | | 5 | S7- 5B | 25 | Y | | 23 |
| A 27R | | | J1-W* | 19 | N | | 5 | S7- 5A | 25 | Y | | 23 |
| A 28 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 28A | 4 | | SHLD A28 | 25 | N | | | E3 | 25 | N | | |
| A 28L | | | J1-Z* | 19 | N | | 5 | T1- 5 | 25 | Y | 21 | 20 |
| A 28R | | | J1-Y* | 19 | N | | 5 | T1- 4 | 25 | Y | 21 | 20 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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SCALE-NONE REV LTR B SHEET 11 OF 78

MIL 2085 - 4-63 WIR

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR | | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 5A | 4 | | SHLD A5 | 25 | N | | | E2 | 25 | N | | |
| A 5L | | | J1-J | 19 | N | | 5 | S7- 2B | 25 | Y | | 23 |
| A 5R | | | J1-H | 19 | N | | 5 | S7- 2A | 25 | Y | | 23 |
| A 6 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 6A | 4 | | SHLD A6 | 25 | N | | | E2 | 25 | N | | |
| A 6L | | | J1-L | 19 | N | | 5 | J8-R | 19 | N | 18 | 11 |
| A 6R | | | J1-K | 19 | N | | 5 | J8-P | 19 | N | 18 | 11 |
| A 7 | 3 | | J1-P | 19 | N | | 5 | P10-54 | 19 | N | 18 | 7 |
| A 8 | 3 | | J1-R | 19 | N | | 5 | P10-43 | 19 | N | 18 | 7 |
| A 9 | 3 | | J1-S | 19 | N | | 5 | P10-32 | 19 | N | 18 | 7 |
| A 10 | 3 | | J1-T | 19 | N | | 5 | P10-21 | 19 | N | 18 | 7 |
| A 11 | 3 | | J1-U | 19 | N | | 5 | P9-44 | 19 | N | 18 | 9 |
| A 12 | 3 | | J1-V | 19 | N | | 5 | P9-33 | 19 | N | 18 | 9 |
| A 13 | 3 | | J1-W | 19 | N | | 5 | P9-22 | 19 | N | 18 | 9 |
| A 14 | 3 | | J1-X | 19 | N | | 5 | P9-11 | 19 | N | 18 | 9 |
| A 15 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED
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HOUSTON, TEXAS

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SCALE-NONE REV LTR B SHEET 9 OF 78

MIL 2085 - 4-63 WIR

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR | | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 29 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 29A | 4 | | SHLD A29 | 25 | N | | | E3 | 25 | N | | |
| A 29L | | | J1-BB | 19 | N | | 5 | T2- 5 | 25 | Y | 21 | 18 |
| A 29R | | | J1-AA | 19 | N | | 5 | T2- 4 | 25 | Y | 21 | 18 |
| A 30 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 30A | 4 | | SHLD A30 | 25 | N | | | E3 | 25 | N | | |
| A 30L | | | J1-DD | 19 | N | | 5 | S7-10B | 25 | Y | | 23 |
| A 30R | | | J1-EE | 19 | N | | 5 | S7-10A | 25 | Y | | 23 |
| A 31 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 31A | 4 | | SHLD A31 | 25 | N | | | E3 | 25 | N | | |
| A 31L | | | J1-FF | 19 | N | | 5 | S8-10B | 25 | Y | | 22 |
| A 31R | | | J1-GG | 19 | N | | 5 | S8-10A | 25 | Y | | 22 |
| A 32 | 4 | | J1-HH | 19 | N | | 5 | E36 | 25 | N | 14 13 | |
| A 33 | 4 | | J1-JJ | 19 | N | | 5 | E35 | 25 | N | 14 13 | |
| A 34 | 4 | | J1-KK | 19 | N | | 5 | E37 | 25 | N | 14 13 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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SIZE A 1900097

SCALE-NONE REV LTR B SHEET 12 OF 78

MIL 2085 - 4-63 WIR

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

GCF

WIRE HARNESS A

B 1900097

| CONDUCTOR | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CIRCUIT POINT | 2 | T I N | ITEM NO. | NO. | CIRCUIT POINT | 2 | T I N | ITEM NO. | NO. |
| A 38L | | J2-J | 19 | N | | 6 | P7-39 | 19 | N | 18 | 39 |
| A 38R | | J2-H | 19 | N | | 6 | P7-47 | 19 | N | 18 | 39 |
| A 39 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 39A | 4 | SHLD A39 | 25 | N | | | E4 | 25 | N | | |
| A 39L | | J2-L | 19 | N | | 6 | P7-38 | 19 | N | 18 | 39 |
| A 39R | | J2-K | 19 | N | | 6 | P7-48 | 19 | N | 18 | 39 |
| A 40 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 40A | 4 | SHLD A40 | 25 | N | | | E4 | 25 | N | | |
| A 40L | | J2-N | 19 | N | | 6 | P8-42 | 19 | N | 18 | 40 |
| A 40R | | J2-M | 19 | N | | 6 | P8-44 | 19 | N | 18 | 40 |
| A 41 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 41A | 4 | SHLD A41 | 25 | N | | | E4 | 25 | N | | |
| A 41L | | J2-R | 19 | N | | 6 | P8-41 | 19 | N | 18 | 40 |
| A 41R | | J2-P | 19 | N | | 6 | P8-45 | 19 | N | 18 | 40 |
| A 42 | 1 | | | | 8 9 | | | | | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

SIZE A

1900097

SCALE - NONE   REV LTR B   SHEET 14 OF 76

MIL 2085 - 4-63 WIR

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GCF

WIRE HARNESS A

B 1900097

| CONDUCTOR | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CIRCUIT POINT | 2 | T I N | ITEM NO. | NO. | CIRCUIT POINT | 2 | T I N | ITEM NO. | NO. |
| | | | | | A 10 | | | | | A 11 | |
| A 42A | 4 | SHLD A42 | 25 | N | | | E5 | 25 | N | 14 13 | |
| A 42L | | J2-T | 19 | N | | 6 | P8-40 | 19 | N | 18 | 40 |
| A 42R | | J2-S | 19 | N | | 6 | P8-46 | 19 | N | 18 | 40 |
| A 43 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 43A | 4 | SHLD A43 | 25 | N | | | E5 | 25 | N | | |
| A 43L | | J2-V | 19 | N | | 6 | P8-39 | 19 | N | 18 | 40 |
| A 43R | | J2-U | 19 | N | | 6 | P8-47 | 19 | N | 18 | 40 |
| A 44 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 44A | 4 | SHLD A44 | 25 | N | | | E5 | 25 | N | | |
| A 44L | | J2-X | 19 | N | | 6 | P8-38 | 19 | N | 18 | 40 |
| A 44R | | J2-W | 19 | N | | 6 | P8-48 | 19 | N | 18 | 40 |
| A 45 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 45A | 4 | SHLD A45 | 25 | N | | | E5 | 25 | N | | |
| A 45L | | J2-C* | 19 | N | | 6 | P7-37 | 19 | N | 18 | 39 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
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SIZE A

1900097

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MIL 2085 - 4-63 WIR

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GCF

WIRE HARNESS A

B 1900097

| CONDUCTOR | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CIRCUIT POINT | 2 | T I N | ITEM NO. | NO. | CIRCUIT POINT | 2 | T I N | ITEM NO. | NO. |
| A 35 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 35A | 4 | SHLD A35 | 25 | N | | | E4 | 25 | N | 14 13 | |
| A 35L | | J2-C | 19 | N | | 6 | P7-42 | 19 | N | 18 | 39 |
| A 35R | | J2-B | 19 | N | | 6 | P7-44 | 19 | N | 18 | 39 |
| A 36 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 36A | 4 | SHLD A36 | 25 | N | | | E4 | 25 | N | | |
| A 36L | | J2-E | 19 | N | | 6 | P7-41 | 19 | N | 18 | 39 |
| A 36R | | J2-D | 19 | N | | 6 | P7-45 | 19 | N | 18 | 39 |
| A 37 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 37A | 4 | SHLD A37 | 25 | N | | | E4 | 25 | N | | |
| A 37L | | J2-G | 19 | N | | 6 | P7-40 | 19 | N | 18 | 39 |
| A 37R | | J2-F | 19 | N | | 6 | P7-46 | 19 | N | 18 | 39 |
| A 38 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 38A | 4 | SHLD A38 | 25 | N | | | E4 | 25 | N | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

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SIZE A

1900097

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MIL 2085 - 4-63 WIR

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GCF

WIRE HARNESS A

B 1900097

| CONDUCTOR | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CIRCUIT POINT | 2 | T I N | ITEM NO. | NO. | CIRCUIT POINT | 2 | T I N | ITEM NO. | NO. |
| A 45R | | J2-B* | 19 | N | | 6 | P7-49 | 19 | N | 18 | 39 |
| A 46 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 46A | 4 | SHLD A46 | 25 | N | | | E5 | 25 | N | | |
| A 46L | | J2-E* | 19 | N | | 6 | P7-36 | 19 | N | 18 | 39 |
| A 46R | | J2-D* | 19 | N | | 6 | P7-50 | 19 | N | 18 | 39 |
| A 47 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 47A | 4 | SHLD A47 | 25 | N | | | E5 | 25 | N | | |
| A 47L | | J2-G* | 19 | N | | 6 | P7-29 | 19 | N | 18 | 39 |
| A 47R | | J2-F* | 19 | N | | 6 | P7-14 | 19 | N | 18 | 39 |
| A 48 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 48A | 4 | SHLD A48 | 25 | N | | | E5 | 25 | N | | |
| A 48L | | J2-J* | 19 | N | | 6 | P9-27 | 19 | N | 18 | 9 |
| A 48R | | J2-H* | 19 | N | | 6 | P9-28 | 19 | N | 18 | 9 |
| A 49 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

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SIZE A

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MIL 2085 - 4-63 WIR

INCHES
0 1 2
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GCF WIRE HARNESS A B 1900097

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | FROM CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CIRCUIT POINT | 2 | T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A 53 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 53A | 4 | SHLD A53 | 25 | N | | | E6 | 25 | N | | |
| A 53L | | J2-X* | 19 | N | | 6 | P7-30 | 19 | N | 18 | 39 |
| A 53R | | J2-W* | 19 | N | | 6 | P7-13 | 19 | N | 18 | 39 |
| A 54 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 54A | 4 | SHLD A54 | 25 | N | | | E6 | 25 | N | | |
| A 54L | | J2-Z* | 19 | N | | 6 | P9-20 | 19 | N | 18 | 9 |
| A 54R | | J2-Y* | 19 | N | | 6 | P9-21 | 19 | N | 18 | 9 |
| A 55 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 55A | 4 | SHLD A55 | 25 | N | | | E7 | 25 | N | 14 13 | |
| A 55L | | J2-CC | 19 | N | | 6 | P8-30 | 19 | N | 18 | 40 |
| A 55R | | J2-BB | 19 | N | | 6 | P8-13 | 19 | N | 18 | 40 |
| A 56 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 56A | 4 | SHLD A56 | 25 | N | | | E7 | 25 | N | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

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MIL 2085 - 4-63 WIR

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | FROM CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CIRCUIT POINT | 2 | T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A 56L | | J2-EE | 19 | N | | 6 | P8-19 | 19 | N | 18 | 40 |
| A 56R | | J2-DD | 19 | N | | 6 | P8-24 | 19 | N | 18 | 40 |
| A 57 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 57A | 4 | SHLD A57 | 25 | N | | | E7 | 25 | N | | |
| A 57L | | J2-GG | 19 | N | | 6 | P9-16 | 19 | N | 18 | 9 |
| A 57R | | J2-FF | 19 | N | | 6 | P9-17 | 19 | N | 18 | 9 |
| A 58 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 58A | 4 | SHLD A58 | 25 | N | | | E7 | 25 | N | | |
| A 58L | | J2-JJ | 19 | N | | 6 | P7-19 | 19 | N | 18 | 39 |
| A 58R | | J2-HH | 19 | N | | 6 | P7-24 | 19 | N | 18 | 39 |
| A 59 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 59A | 4 | SHLD A59 | 25 | N | | | E7 | 25 | N | | |
| A 59L | | J2-LL | 19 | N | | 6 | P7-20 | 19 | N | 18 | 39 |
| A 59R | | J2-KK | 19 | N | | 6 | P7-23 | 19 | N | 18 | 39 |
| A 60 | 1 | | | | 8 9 | | | | | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900097
SCALE - NONE | REV LTR B | SHEET 19 OF 78

MIL 2085 - 4-63 WIR

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | FROM CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CIRCUIT POINT | 2 | T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A 49A | 4 | SHLD A49 | 25 | N | | | E6 | 25 | N | 14 13 | |
| A 49L | | J2-N* | 19 | N | | 6 | P8-37 | 19 | N | 18 | 40 |
| A 49R | | J2-M* | 19 | N | | 6 | P8-49 | 19 | N | 18 | 40 |
| A 50 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 50A | 4 | SHLD A50 | 25 | N | | | E6 | 25 | N | | |
| A 50L | | J2-R* | 19 | N | | 6 | P8-36 | 19 | N | 18 | 40 |
| A 50R | | J2-P* | 19 | N | | 6 | P8-50 | 19 | N | 18 | 40 |
| A 51 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 51A | 4 | SHLD A51 | 25 | N | | | E6 | 25 | N | | |
| A 51L | | J2-T* | 19 | N | | 6 | P8-29 | 19 | N | 18 | 40 |
| A 51R | | J2-S* | 19 | N | | 6 | P8-14 | 19 | N | 18 | 40 |
| A 52 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 52A | 4 | SHLD A52 | 25 | N | | | E6 | 25 | N | | |
| A 52L | | J2-V* | 19 | N | | 6 | P9- 8 | 19 | N | 18 | 9 |
| A 52R | | J2-U* | 19 | N | | 6 | P9- 9 | 19 | N | 18 | 9 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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SCALE - NONE | REV LTR B | SHEET 17 OF 78

MIL 2085 - 4-63 WIR

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | FROM CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CIRCUIT POINT | 2 | T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | A 10 | | | | | A 11 | |
| A 60A | 4 | SHLD A60 | 25 | N | | | E7 | 25 | N | | |
| A 60L | | J2-NN | 19 | N | | 6 | P8-20 | 19 | N | 18 | 40 |
| A 60R | | J2-MM | 19 | N | | 6 | P8-23 | 19 | N | 18 | 40 |
| A 61 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 61A | 4 | SHLD A61 | 25 | N | | | E8 | 25 | N | 14 13 | |
| A 61L | | J3-C | 19 | N | | 4 | P4-58 | 19 | N | 18 | 50 |
| A 61R | | J3-B | 19 | N | | 4 | P4-60 | 19 | N | 18 | 50 |
| A 62 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 62A | 4 | SHLD A62 | 25 | N | | | E8 | 25 | N | | |
| A 62L | | J3-E | 19 | N | | 4 | P4-57 | 19 | N | 18 | 50 |
| A 62R | | J3-D | 19 | N | | 4 | P4-61 | 19 | N | 18 | 50 |
| A 63 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 63A | 4 | SHLD A63 | 25 | N | | | E8 | 25 | N | | |
| A 63L | | J3-G | 19 | N | | 4 | P4-56 | 19 | N | 18 | 50 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

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MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900097
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MIL 2085 - 4-63 WIR

INCHES
0 1 2
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GCF WIRE HARNESS A B 1900097

| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 67A | 4 | | SHLD A67 | 25 | N | | | E9 | 25 | N | | |
| A 67L | | | J3-R | 19 | N | | 4 | P4-41 | 19 | N | 18 | 50 |
| A 67R | | | J3-P | 19 | N | | 4 | P4-45 | 19 | N | 18 | 50 |
| A 68 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 68A | 4 | | SHLD A68 | 25 | N | | | E9 | 25 | N | | |
| A 68L | | | J3-T | 19 | N | | 4 | P4-40 | 19 | N | 18 | 50 |
| A 68R | | | J3-S | 19 | N | | 4 | P4-46 | 19 | N | 18 | 50 |
| A 69 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 69A | 4 | | SHLD A69 | 25 | N | | | E9 | 25 | N | | |
| A 69L | | | J3-V | 19 | N | | 4 | P4-39 | 19 | N | 18 | 50 |
| A 69R | | | J3-U | 19 | N | | 4 | P4-47 | 19 | N | 18 | 50 |
| A 70 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 70A | 4 | | SHLD A70 | 25 | N | | | E9 | 25 | N | | |
| A 70L | | | J3-X | 19 | N | | 4 | P4-38 | 19 | N | 18 | 50 |
| A 70R | | | J3-W | 19 | N | | 4 | P4-48 | 19 | N | 18 | 50 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
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SIZE A
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REV LTR B
SHEET 22 OF 78

MIL 2085 - 4-63 WIR

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 71 | 3 | | J3-Y | 19 | N | | 4 | P3-27 | 19 | N | 18 | 49 |
| A 72 | 3 | | J3-Z | 19 | N | | 4 | P3-33 | 19 | N | 18 | 49 |
| A 73 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 73A | 4 | | SHLD A73 | 25 | N | | 4 | E10 | 25 | N | 14 13 | |
| A 73L | | | J3-C* | 19 | N | | 4 | P4-53 | 19 | N | 18 | 50 |
| A 73R | | | J3-B* | 19 | N | | | P4-65 | 19 | N | 18 | 50 |
| A 74 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 74A | 4 | | SHLD A74 | 25 | N | | | E10 | 25 | N | | |
| A 74L | | | J3-E* | 19 | N | | 4 | P4-52 | 19 | N | 18 | 50 |
| A 74R | | | J3-D* | 19 | N | | 4 | P4-66 | 19 | N | 18 | 50 |
| A 75 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 75A | 4 | | SHLD A75 | 25 | N | | | E10 | 25 | N | | |
| A 75L | | | J3-G* | 19 | N | | 4 | P4-17 | 19 | N | 18 | 50 |
| A 75R | | | J3-F* | 19 | N | | 4 | P4- 6 | 19 | N | 18 | 50 |
| A 76 | 1 | | | | | 8 9 | | | | | | |

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REV LTR B
SHEET 23 OF 78

MIL 2085 - 4-63 WIR

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 63R | | | J3-F | 19 | N | | 4 | P4-62 | 19 | N | 18 | 50 |
| A 64 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 64A | 4 | | SHLD A64 | 25 | N | | | E8 | 25 | N | | |
| A 64L | | | J3-J | 19 | N | | 4 | P4-55 | 19 | N | 18 | 50 |
| A 64R | | | J3-H | 19 | N | | 4 | P4-63 | 19 | N | 18 | 50 |
| A 65 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 65A | 4 | | SHLD A65 | 25 | N | | | E8 | 25 | N | | |
| A 65L | | | J3-L | 19 | N | | 4 | P4-54 | 19 | N | 18 | 50 |
| A 65R | | | J3-K | 19 | N | | 4 | P4-64 | 19 | N | 18 | 50 |
| A 66 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 66A | 4 | | SHLD A66 | 25 | N | | | E9 | 25 | N | 14 13 | |
| A 66L | | | J3-N | 19 | N | | 4 | P4-42 | 19 | N | 18 | 50 |
| A 66R | | | J3-M | 19 | N | | 4 | P4-44 | 19 | N | 18 | 50 |
| A 67 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |

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SHEET 21 OF 78

MIL 2085 - 4-63 WIR

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | A 10 | | | | | A 11 | |
| A 76A | 4 | | SHLD A76 | 25 | N | | | E10 | 25 | N | | |
| A 76L | | | J3-J* | 19 | N | | 4 | P4-18 | 19 | N | 18 | 50 |
| A 76R | | | J3-H* | 19 | N | | 4 | P4- 5 | 19 | N | 18 | 50 |
| A 77 | 3 | | J3-I* | 19 | N | | 4 | P4-27 | 19 | N | 18 | 50 |
| A 78 | 3 | | J3-K* | 19 | N | | 4 | P4-33 | 19 | N | 18 | 50 |
| A 79 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 79A | 4 | | SHLD A79 | 25 | N | | | E10 | 25 | N | | |
| A 79L | | | J3-N* | 19 | N | | 4 | P4-37 | 19 | N | 18 | 50 |
| A 79R | | | J3-M* | 19 | N | | 4 | P4-49 | 19 | N | 18 | 50 |
| A 80 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 80A | 4 | | SHLD A80 | 25 | N | | | E11 | 25 | N | 14 13 | |
| A 80L | | | J3-R* | 19 | N | | 4 | P4-36 | 19 | N | 18 | 50 |
| A 80R | | | J3-P* | 19 | N | | 4 | P4-50 | 19 | N | 18 | 50 |
| A 81 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

GCF WIRE HARNESS A B 1900097

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD CIRCUIT POINT | STRIP WIRE OR JACKET / T I N | TERMINATION SPEC. ITEM NO. | NO. | TO CUT WIRE OR SHIELD CIRCUIT POINT | STRIP WIRE OR JACKET / T I N | TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 85 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |
| A 85A | 4 | SHLD A85 | 25N | | | E12 | 25N | 14 13 | |
| A 85L | | J3-CC | 19N | | 4 | P4-30 | 19N | 18 | 50 |
| A 85R | | J3-BB | 19N | | 4 | P4-13 | 19N | 18 | 50 |
| A 86 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |
| A 86A | 4 | SHLD A86 | 25N | | | E12 | 25N | | |
| A 86L | | J3-EE | 19N | | 4 | P4-19 | 19N | 18 | 50 |
| A 86R | | J3-DD | 19N | | 4 | P4-24 | 19N | 18 | 50 |
| A 87 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |
| A 87A | 4 | SHLD A87 | 25N | | | E12 | 25N | | |
| A 87L | | J3-GG | 19N | | 4 | P10-26 | 19N | 18 | 7 |
| A 87R | | J3-FF | 19N | | 4 | P10-27 | 19N | 18 | 7 |
| A 88 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |
| A 88A | 4 | SHLD A88 | 25N | | | E12 | 25N | | |

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2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD CIRCUIT POINT | STRIP WIRE OR JACKET / T I N | TERMINATION SPEC. ITEM NO. | NO. | TO CUT WIRE OR SHIELD CIRCUIT POINT | STRIP WIRE OR JACKET / T I N | TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 88L | | J3-JJ | 19N | | 4 | P4- 9 | 19N | 18 | 50 |
| A 88R | | J3-HH | 19N | | 4 | P4- 2 | 19N | 18 | 50 |
| A 89 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |
| A 89A | 4 | SHLD A89 | 25N | | | E12 | 25N | | |
| A 89L | | J3-LL | 19N | | 4 | P4-10 | 19N | 18 | 50 |
| A 89R | | J3-KK | 19N | | 4 | P4- 1 | 19N | 18 | 50 |
| A 90 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |
| A 90A | 4 | SHLD A90 | 25N | | | E12 | 25N | | |
| A 90L | | J3-NN | 19N | | 4 | P4-20 | 19N | 18 | 50 |
| A 90R | | J3-MM | 19N | | 4 | P4-23 | 19N | 18 | 50 |
| A 91 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |
| A 91A | 4 | SHLD A91 | 25N | | | E13 | 25N | 14 13 | |
| A 91L | | J4-C | 19N | | 8 | P3-58 | 19N | 18 | 49 |
| A 91R | | J4-B | 19N | | 8 | P3-60 | 19N | 18 | 49 |
| A 92 | 1 | | | 8 9 | | | | | |

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD CIRCUIT POINT | STRIP WIRE OR JACKET / T I N | TERMINATION SPEC. ITEM NO. | NO. | TO CUT WIRE OR SHIELD CIRCUIT POINT | STRIP WIRE OR JACKET / T I N | TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 81A | 4 | SHLD A81 | 25N | | | E11 | 25N | | |
| A 81L | | J3-T* | 19N | | 4 | P4-29 | 19N | 18 | 50 |
| A 81R | | J3-S* | 19N | | 4 | P4-14 | 19N | 18 | 50 |
| A 82 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |
| A 82A | 4 | SHLD A82 | 25N | | | E11 | 25N | | |
| A 82L | | J3-V* | 19N | | 4 | P10-30 | 19N | 18 | 7 |
| A 82R | | J3-U* | 19N | | 4 | P10-31 | 19N | 18 | 7 |
| A 83 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |
| A 83A | 4 | SHLD A83 | 25N | | | E11 | 25N | | |
| A 83L | | J3-X* | 19N | | 4 | P4- 7 | 19N | 18 | 50 |
| A 83R | | J3-W* | 19N | | 4 | P4- 4 | 19N | 18 | 50 |
| A 84 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |
| A 84A | 4 | SHLD A84 | 25N | | | E11 | 25N | | |
| A 84L | | J3-Z* | 19N | | 4 | P4- 8 | 19N | 18 | 50 |
| A 84R | | J3-Y* | 19N | | 4 | P4- 3 | 19N | 18 | 50 |

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2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD CIRCUIT POINT | STRIP WIRE OR JACKET / T I N | TERMINATION SPEC. ITEM NO. | NO. | TO CUT WIRE OR SHIELD CIRCUIT POINT | STRIP WIRE OR JACKET / T I N | TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|
| | | | | A 10 | | | | A 11 | |
| A 92A | 4 | SHLD A92 | 25N | | | E13 | 25N | | |
| A 92L | | J4-E | 19N | | 8 | P3-57 | 19N | 18 | 49 |
| A 92R | | J4-D | 19N | | 8 | P3-61 | 19N | 18 | 49 |
| A 93 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |
| A 93A | 4 | SHLD A93 | 25N | | | E13 | 25N | | |
| A 93L | | J4-G | 19N | | 8 | P3-56 | 19N | 18 | 49 |
| A 93R | | J4-F | 19N | | 8 | P3-62 | 19N | 18 | 49 |
| A 94 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |
| A 94A | 4 | SHLD A94 | 25N | | | E13 | 25N | | |
| A 94L | | J4-J | 19N | | 8 | P3-55 | 19N | 18 | 49 |
| A 94R | | J4-H | 19N | | 8 | P3-63 | 19N | 18 | 49 |
| A 95 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |
| A 95A | 4 | SHLD A95 | 25N | | | E13 | 25N | | |
| A 95L | | J4-L | 19N | | 8 | P3-54 | 19N | 18 | 49 |

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INCHES
0 1 2
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| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | FROM TERMINATION SPEC. 1 ITEM NO. | | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TO TERMINATION SPEC 1 ITEM NO. | | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 99A | 4 | SHLD A99 | 25 | N | | | | E14 | 25 | N | | | |
| A 99L | | J4-V | 19 | N | | | 8 | P3-39 | 19 | N | 18 | | 49 |
| A 99R | | J4-U | 19 | N | | | 8 | P3-47 | 19 | N | 18 | | 49 |
| A 100 | 1 | | | | 8 | 9 | | | | | | | |
| | | | | | A | 10 | | | | | A | 11 | |
| A 100A | 4 | SHLD A100 | 25 | N | | | | E14 | 25 | N | | | |
| A 100L | | J4-X | 19 | N | | | 8 | P3-38 | 19 | N | 18 | | 49 |
| A 100R | | J4-W | 19 | N | | | 8 | P3-48 | 19 | N | 18 | | 49 |
| A 101 | 3 | J4-Y | 19 | N | | | 8 | P1-27 | 19 | N | 18 | | 46 |
| A 102 | 3 | J4-Z | 19 | N | | | 8 | P1-33 | 19 | N | 18 | | 46 |
| A 103 | 1 | | | | 8 | 9 | | | | | | | |
| | | | | | A | 10 | | | | | A | 11 | |
| A 103A | 4 | SHLD A104 | 25 | N | | | | E14 | 25 | N | | | |
| A 103L | | J4-C* | 19 | N | | | 8 | P3-53 | 19 | N | 18 | | 49 |
| A 103R | | J4-B* | 19 | N | | | 8 | P3-65 | 19 | N | 18 | | 49 |
| A 104 | 1 | | | | 8 | 9 | | | | | | | |
| | | | | | A | 10 | | | | | A | 11 | |
| A 104A | 4 | SHLD A104 | 25 | N | | | | E14 | 25 | N | | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
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GCF WIRE HARNESS A B 1900097

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | FROM TERMINATION SPEC. 1 ITEM NO. | | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TO TERMINATION SPEC 1 ITEM NO. | | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 104L | | J4-E* | 19 | N | | | 8 | P3-52 | 19 | N | 18 | | 49 |
| A 104R | | J4-D* | 19 | N | | | 8 | P3-66 | 19 | N | 18 | | 49 |
| A 105 | 1 | | | | 8 | 9 | | | | | | | |
| | | | | | A | 10 | | | | | A | 11 | |
| A 105A | 4 | SHLD A105 | 25 | N | | | | E14 | 25 | N | | | |
| A 105L | | J4-G* | 19 | N | | | 8 | P3-17 | 19 | N | 18 | | 49 |
| A 105R | | J4-F* | 19 | N | | | 8 | P3- 6 | 19 | N | 18 | | 49 |
| A 106 | 1 | | | | 8 | 9 | | | | | | | |
| | | | | | A | 10 | | | | | A | 11 | |
| A 106A | 4 | SHLD A106 | 25 | N | | | | E15 | 25 | N | 14 | 13 | |
| A 106L | | J4-J* | 19 | N | | | 8 | P3-18 | 19 | N | 18 | | 49 |
| A 106R | | J4-H* | 19 | N | | | 8 | P3- 5 | 19 | N | 18 | | 49 |
| A 107 | 3 | J4-I* | 19 | N | | | 8 | P2-27 | 19 | N | 18 | | 47 |
| A 108 | 3 | J4-K* | 19 | N | | | 8 | P2-33 | 19 | N | 18 | | 47 |
| A 109 | 1 | | | | 8 | 9 | | | | | | | |
| | | | | | A | 10 | | | | | A | 11 | |
| A 109A | 4 | SHLD A109 | 25 | N | | | | E15 | 25 | N | | | |
| A 109L | | J4-N* | 19 | N | | | 8 | P3-37 | 19 | N | 18 | | 49 |

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | FROM TERMINATION SPEC. 1 ITEM NO. | | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TO TERMINATION SPEC 1 ITEM NO. | | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 95R | | J4-K | 19 | N | | | 8 | P3-64 | 19 | N | 18 | | 49 |
| A 96 | 1 | | | | 8 | 9 | | | | | | | |
| | | | | | A | 10 | | | | | A | 11 | |
| A 96A | 4 | SHLD A96 | 25 | N | | | | E13 | 25 | N | | | |
| A 96L | | J4-N | 19 | N | | | 8 | P3-42 | 19 | N | 18 | | 49 |
| A 96R | | J4-M | 19 | N | | | 8 | P3-44 | 19 | N | 18 | | 49 |
| A 97 | 1 | | | | 8 | 9 | | | | | | | |
| | | | | | A | 10 | | | | | A | 11 | |
| A 97A | 4 | SHLD A97 | 25 | N | | | | E13 | 25 | N | | | |
| A 97L | | J4-R | | | | | 8 | P3-41 | 19 | N | 18 | | 49 |
| A 97R | | J4-P | | | | | 8 | P3-45 | 19 | N | 18 | | 49 |
| A 98 | 1 | | | | 8 | 9 | | | | | | | |
| | | | | | A | 10 | | | | | A | 11 | |
| A 98A | 4 | SHLD A98 | 25 | N | | | | E14 | 25 | N | 14 | 13 | |
| A 98L | | J4-T | 19 | N | | | 8 | P3-40 | 19 | N | 18 | | 49 |
| A 98R | | J4-S | 19 | N | | | 8 | P3-46 | 19 | N | 18 | | 49 |
| A 99 | 1 | | | | 8 | 9 | | | | | | | |
| | | | | | A | 10 | | | | | A | 11 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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SCALE - NONE | REV LTR B | SHEET 29 OF 78

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | FROM TERMINATION SPEC. 1 ITEM NO. | | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TO TERMINATION SPEC 1 ITEM NO. | | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 109R | | J4-M* | 19 | N | | | 8 | P3-49 | 19 | N | 18 | | 49 |
| A 110 | 1 | | | | 8 | 9 | | | | | | | |
| | | | | | A | 10 | | | | | A | 11 | |
| A 110A | 4 | SHLD A110 | 25 | N | | | | E15 | 25 | N | | | |
| A 110L | | J4-R* | 19 | N | | | 8 | P3-36 | 19 | N | 18 | | 49 |
| A 110R | | J4-P* | 19 | N | | | 8 | P3-50 | 19 | N | 18 | | 49 |
| A 111 | 1 | | | | 8 | 9 | | | | | | | |
| | | | | | A | 10 | | | | | A | 11 | |
| A 111A | 4 | SHLD A111 | 25 | N | | | | E15 | 25 | N | | | |
| A 111L | | J4-V* | 19 | N | | | 8 | P10-41 | 19 | N | 18 | | 7 |
| A 111R | | J4-U* | 19 | N | | | 8 | P10-42 | 19 | N | 18 | | 7 |
| A 112 | 1 | | | | 8 | 9 | | | | | | | |
| | | | | | A | 10 | | | | | A | 11 | |
| A 112A | 4 | SHLD A112 | 25 | N | | | | E15 | 25 | N | | | |
| A 112L | | J4-X* | 19 | N | | | 8 | P3- 7 | 19 | N | 18 | | 49 |
| A 112R | | J4-W* | 19 | N | | | 8 | P3- 4 | 19 | N | 18 | | 49 |
| A 113 | 1 | | | | 8 | 9 | | | | | | | |
| | | | | | A | 10 | | | | | A | 11 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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INCHES
0 1 2
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| CONDUCTOR |  |  | FROM |  |  |  |  | TO |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 117 | 1 |  |  |  |  | 8 9 |  |  |  |  |  |  |
|  |  |  |  |  |  | A 10 |  |  |  |  | A 11 |  |
| A 117A | 4 |  | SHLD A117 | 25 | N |  |  | E16 | 25 | N |  |  |
| A 117L |  |  | J4-JJ | 19 | N |  | 8 | P3- 9 | 19 | N | 18 | 49 |
| A 117R |  |  | J4-HH | 19 | N |  | 8 | P3- 2 | 19 | N | 18 | 49 |
| A 118 | 1 |  |  |  |  | 8 9 |  |  |  |  |  |  |
|  |  |  |  |  |  | A 10 |  |  |  |  | A 11 |  |
| A 118A | 4 |  | SHLD A118 | 25 | N |  |  | E16 | 25 | N |  |  |
| A 118L |  |  | J4-LL | 19 | N |  | 8 | P3-10 | 19 | N | 18 | 49 |
| A 118R |  |  | J4-KK | 19 | N |  | 8 | P3- 1 | 19 | N | 18 | 49 |
| A 119 | 1 |  |  |  |  | 8 9 |  |  |  |  |  |  |
|  |  |  |  |  |  | A 10 |  |  |  |  | A 11 |  |
| A 119A | 4 |  | SHLD A119 | 25 | N |  |  | E16 | 25 | N |  |  |
| A 119L |  |  | J4-NN | 19 | N |  | 8 | P3-20 | 19 | N | 18 | 49 |
| A 119R |  |  | J4-MM | 19 | N |  | 8 | P3-23 | 19 | N | 18 | 49 |
| A 120 | 1 |  |  |  |  | 8 9 |  |  |  |  |  |  |
|  |  |  |  |  |  | A 10 |  |  |  |  | A 11 |  |
| A 120A | 4 |  | SHLD A120 | 25 | N |  |  | E17 | 25 | N | 14 13 |  |

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2▷ DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR |  |  | FROM |  |  |  |  | TO |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 120L |  |  | J5-C | 19 | N |  | 3 | P6-58 | 19 | N | 18 | 38 |
| A 120R |  |  | J5-B | 19 | N |  | 3 | P6-60 | 19 | N | 18 | 38 |
| A 121 | 1 |  |  |  |  | 8 9 |  |  |  |  |  |  |
|  |  |  |  |  |  | A 10 |  |  |  |  | A 11 |  |
| A 121A | 4 |  | SHLD A121 | 25 | N |  |  | E17 | 25 | N |  |  |
| A 121L |  |  | J5-E | 19 | N |  | 3 | P6-57 | 19 | N | 18 | 38 |
| A 121R |  |  | J5-D | 19 | N |  | 3 | P6-61 | 19 | N | 18 | 38 |
| A 122 | 1 |  |  |  |  | 8 9 |  |  |  |  |  |  |
|  |  |  |  |  |  | A 10 |  |  |  |  | A 11 |  |
| A 122A | 4 |  | SHLD A122 | 25 | N |  |  | E17 | 25 | N |  |  |
| A 122L |  |  | J5-G | 19 | N |  | 3 | P6-56 | 19 | N | 18 | 38 |
| A 122R |  |  | J5-F | 19 | N |  | 3 | P6-62 | 19 | N | 18 | 38 |
| A 123 | 1 |  |  |  |  | 8 9 |  |  |  |  |  |  |
|  |  |  |  |  |  | A 10 |  |  |  |  | A 11 |  |
| A 123A | 4 |  | SHLD A123 | 25 | N |  |  | E17 | 25 | N |  |  |
| A 123L |  |  | J5-J | 19 | N |  | 3 | P6-55 | 19 | N | 18 | 38 |
| A 123R |  |  | J5-H | 19 | N |  | 3 | P6-63 | 19 | N | 18 | 38 |
| A 124 | 1 |  |  |  |  | 8 9 |  |  |  |  |  |  |

1▷ THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2▷ DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR |  |  | FROM |  |  |  |  | TO |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 113A | 4 |  | SHLD A113 | 25 | N |  |  | E15 | 25 | N |  |  |
| A 113L |  |  | J4-Z* | 19 | N |  | 8 | P3- 8 | 19 | N | 18 | 49 |
| A 113R |  |  | J4-Y* | 19 | N |  | 8 | P3- 3 | 19 | N | 18 | 49 |
| A 114 | 1 |  |  |  |  | 8 9 |  |  |  |  |  |  |
|  |  |  |  |  |  | A 10 |  |  |  |  | A 11 |  |
| A 114A | 4 |  | SHLD A114 | 25 | N |  |  | E16 | 25 | N | 14 13 |  |
| A 114L |  |  | J4-CC | 19 | N |  | 8 | P3-30 | 19 | N | 18 | 49 |
| A 114R |  |  | J4-BB | 19 | N |  | 8 | P3-13 | 19 | N | 18 | 49 |
| A 115 | 1 |  |  |  |  | 8 9 |  |  |  |  |  |  |
|  |  |  |  |  |  | A 10 |  |  |  |  | A 11 |  |
| A 115A | 4 |  | SHLD A115 | 25 | N |  |  | E16 | 25 | N |  |  |
| A 115L |  |  | J4-EE | 19 | N |  | 8 | P3-19 | 19 | N | 18 | 49 |
| A 115R |  |  | J4-DD | 19 | N |  | 8 | P3-24 | 19 | N | 18 | 49 |
| A 116 | 1 |  |  |  |  | 8 9 |  |  |  |  |  |  |
|  |  |  |  |  |  | A 10 |  |  |  |  | A 11 |  |
| A 116A | 4 |  | SHLD A116 | 25 | N |  |  | E16 | 25 | N |  |  |
| A 116L |  |  | J4-GG | 19 | N |  | 8 | P10-37 | 19 | N | 18 | 7 |
| A 116R |  |  | J4-FF | 19 | N |  | 8 | P10-38 | 19 | N | 18 | 7 |

1▷ THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2▷ DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR |  |  | FROM |  |  |  |  | TO |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
|  |  |  |  |  |  | A 10 |  |  |  |  | A 11 |  |
| A 124A | 4 |  | SHLD A124 | 25 | N |  |  | E17 | 25 | N |  |  |
| A 124L |  |  | J5-L | 19 | N |  | 3 | P6-54 | 19 | N | 18 | 38 |
| A 124R |  |  | J5-K | 19 | N |  | 3 | P6-64 | 19 | N | 18 | 38 |
| A 125 | 1 |  |  |  |  | 8 9 |  |  |  |  |  |  |
|  |  |  |  |  |  | A 10 |  |  |  |  | A 11 |  |
| A 125A | 4 |  | SHLD A125 | 25 | N |  |  | E17 | 25 | N |  |  |
| A 125L |  |  | J5-N | 19 | N |  | 3 | P6-42 | 19 | N | 18 | 38 |
| A 125R |  |  | J5-M | 19 | N |  | 3 | P6-44 | 19 | N | 18 | 38 |
| A 126 | 1 |  |  |  |  | 8 9 |  |  |  |  |  |  |
|  |  |  |  |  |  | A 10 |  |  |  |  | A 11 |  |
| A 126A | 4 |  | SHLD A126 | 25 | N |  |  | E17 | 25 | N |  |  |
| A 126L |  |  | J5-R | 19 | N |  | 3 | P6-41 | 19 | N | 18 | 38 |
| A 126R |  |  | J5-P | 19 | N |  | 3 | P6-45 | 19 | N | 18 | 38 |
| A 127 | 1 |  |  |  |  | 8 9 |  |  |  |  |  |  |
|  |  |  |  |  |  | A 10 |  |  |  |  | A 11 |  |
| A 127A | 4 |  | SHLD A127 | 25 | N |  |  | E18 | 25 | N | 14 13 |  |
| A 127L |  |  | J5-T | 19 | N |  | 3 | P6-40 | 19 | N | 18 | 38 |

1▷ THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2▷ DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

GCF WIRE HARNESS A B 1900097

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD CIRCUIT POINT | STRIP WIRE OR JACKET | TIN | TERMINATION SPEC. ITEM NO. | | NO. | TO CUT WIRE OR SHIELD CIRCUIT POINT | STRIP WIRE OR JACKET | TIN | TERMINATION SPEC ITEM NO. | | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 133 | 1 | | | | 8 | 9 | | | | | | | |
| | | | | | A | 10 | | | | | A | 11 | |
| A 133A | 4 | SHLD A133 | 25 | N | | | | E18 | 25 | N | | | |
| A 133L | | J5-E* | 19 | N | | | 3 | P6-52 | 19 | N | 18 | | 38 |
| A 133R | | J5-D* | 19 | N | | | 3 | P6-66 | 19 | N | 18 | | 38 |
| A 134 | 1 | | | | 8 | 9 | | | | | | | |
| | | | | | A | 10 | | | | | A | 11 | |
| A 134A | 4 | SHLD A134 | 25 | N | | | | E18 | 25 | N | | | |
| A 134L | | J5-G* | 19 | N | | | 3 | P6-17 | 19 | N | 18 | | 38 |
| A 134R | | J5-F* | 19 | N | | | 3 | P6- 6 | 19 | N | 18 | | 38 |
| A 135 | 1 | | | | 8 | 9 | | | | | | | |
| | | | | | A | 10 | | | | | A | 11 | |
| A 135A | 4 | SHLD A135 | 25 | N | | | | E18 | 25 | N | | | |
| A 135L | | J5-J* | 19 | N | | | 3 | P6-18 | 19 | N | 18 | | 38 |
| A 135R | | J5-H* | 19 | N | | | 3 | P6- 5 | 19 | N | 18 | | 38 |
| A 136 | 3 | J5-I* | 19 | N | | | 3 | P6-27 | 19 | N | 18 | | 38 |
| A 137 | 3 | J5-K* | 19 | N | | | 3 | P6-33 | 19 | N | 18 | | 38 |
| A 138 | 1 | | | | 8 | 9 | | | | | | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD CIRCUIT POINT | STRIP WIRE OR JACKET | TIN | TERMINATION SPEC. ITEM NO. | | NO. | TO CUT WIRE OR SHIELD CIRCUIT POINT | STRIP WIRE OR JACKET | TIN | TERMINATION SPEC ITEM NO. | | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | A | 10 | | | | | A | 11 | |
| A 138A | 4 | SHLD A138 | 25 | N | | | | E19 | 25 | N | 14 | 13 | |
| A 138L | | J5-N* | 19 | N | | | 3 | P6-37 | 19 | N | 18 | | 38 |
| A 138R | | J5-M* | 19 | N | | | 3 | P6-49 | 19 | N | 18 | | 38 |
| A 139 | 1 | | | | 8 | 9 | | | | | | | |
| | | | | | A | 10 | | | | | A | 11 | |
| A 139A | 4 | SHLD A139 | 25 | N | | | | E19 | 25 | N | | | |
| A 139L | | J5-R* | 19 | N | | | 3 | P6-36 | 19 | N | 18 | | 38 |
| A 139R | | J5-P* | 19 | N | | | 3 | P6-50 | 19 | N | 18 | | 38 |
| A 140 | 1 | | | | 8 | 9 | | | | | | | |
| | | | | | A | 10 | | | | | A | 11 | |
| A 140A | 4 | SHLD A140 | 25 | N | | | | E19 | 25 | N | | | |
| A 140L | | J5-T* | 19 | N | | | 3 | P6-29 | 19 | N | 18 | | 38 |
| A 140R | | J5-S* | 19 | N | | | 3 | P6-14 | 19 | N | 18 | | 38 |
| A 141 | 1 | | | | 8 | 9 | | | | | | | |
| | | | | | A | 10 | | | | | A | 11 | |
| A 141A | 4 | SHLD A141 | 25 | N | | | | E19 | 25 | N | | | |
| A 141L | | J5-V* | 19 | N | | | 3 | P9-31 | 19 | N | 18 | | 9 |

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD CIRCUIT POINT | STRIP WIRE OR JACKET | TIN | TERMINATION SPEC. ITEM NO. | | NO. | TO CUT WIRE OR SHIELD CIRCUIT POINT | STRIP WIRE OR JACKET | TIN | TERMINATION SPEC ITEM NO. | | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 127R | | J5-S | 19 | N | | | 3 | P6-46 | 19 | N | 18 | | 38 |
| A 128 | 1 | | | | 8 | 9 | | | | | | | |
| | | | | | A | 10 | | | | | A | 11 | |
| A 128A | 4 | SHLD A128 | 25 | N | | | | E18 | 25 | N | | | |
| A 128L | | J5-V | 19 | N | | | 3 | P6-39 | 19 | N | 18 | | 38 |
| A 128R | | J5-U | 19 | N | | | 3 | P6-47 | 19 | N | 18 | | 38 |
| A 129 | 1 | | | | 8 | 9 | | | | | | | |
| | | | | | A | 10 | | | | | A | 11 | |
| A 129A | 4 | SHLD A129 | 25 | N | | | | E18 | 25 | N | | | |
| A 129L | | J5-X | 19 | N | | | 3 | P6-38 | 19 | N | 18 | | 38 |
| A 129R | | J5-W | 19 | N | | | 3 | P6-48 | 19 | N | 18 | | 38 |
| A 130 | 3 | J5-Y | 19 | N | | | 3 | P5-27 | 19 | N | 18 | | 37 |
| A 131 | 3 | J5-Z | 19 | N | | | 3 | P5-33 | 19 | N | 18 | | 37 |
| A 132 | 1 | | | | 8 | 9 | | | | | | | |
| | | | | | A | 10 | | | | | A | 10 | |
| A 132A | 4 | SHLD A132 | 25 | N | | | | E18 | 25 | N | | | |
| A 132L | | J5-C* | 19 | N | | | 3 | P6-53 | 19 | N | 18 | | 38 |
| A 132R | | J5-B* | 19 | N | | | 3 | P6-65 | 19 | N | 18 | | 38 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD CIRCUIT POINT | STRIP WIRE OR JACKET | TIN | TERMINATION SPEC. ITEM NO. | | NO. | TO CUT WIRE OR SHIELD CIRCUIT POINT | STRIP WIRE OR JACKET | TIN | TERMINATION SPEC ITEM NO. | | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 141R | | J5-U* | 19 | N | | | 3 | P9-32 | 19 | N | 18 | | 9 |
| A 142 | 1 | | | | 8 | 9 | | | | | | | |
| | | | | | A | 10 | | | | | A | 11 | |
| A 142A | 4 | SHLD A142 | 25 | N | | | | E19 | 25 | N | | | |
| A 142L | | J5-X* | 19 | N | | | 3 | P6- 7 | 19 | N | 18 | | 38 |
| A 142R | | J5-W* | 19 | N | | | 3 | P6- 4 | 19 | N | 18 | | 38 |
| A 143 | 1 | | | | 8 | 9 | | | | | | | |
| | | | | | A | 10 | | | | | A | 11 | |
| A 143A | 4 | SHLD A143 | 25 | N | | | | E19 | 25 | N | | | |
| A 143L | | J5-Z* | 19 | N | | | 3 | P6- 8 | 19 | N | 18 | | 38 |
| A 143R | | J5-Y* | 19 | N | | | 3 | P6- 3 | 19 | N | 18 | | 38 |
| A 144 | 1 | | | | 8 | 9 | | | | | | | |
| | | | | | A | 10 | | | | | A | 11 | |
| A 144A | 4 | SHLD A144 | 25 | N | | | | E20 | 25 | N | 14 | 13 | |
| A 144L | | J5-CC | 19 | N | | | 3 | P6-30 | 19 | N | 18 | | 38 |
| A 144R | | J5-BB | 19 | N | | | 3 | P6-13 | 19 | N | 18 | | 38 |
| A 145 | 1 | | | | 8 | 9 | | | | | | | |
| | | | | | A | 10 | | | | | A | 11 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

GCF WIRE HARNESS A B 1900097

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD CIRCUIT POINT | STRIP WIRE OR JACKET 2 | TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD CIRCUIT POINT | STRIP WIRE OR JACKET 2 | TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A 149 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 149A | 4 | SHLD A149 | 25 | N | | | E20 | 25 | N | | |
| A 149L | | J5-NN | 19 | N | | 3 | P6-20 | 19 | N | 18 | 38 |
| A 149R | | J5-MM | 19 | N | | 3 | P6-23 | 19 | N | 18 | 38 |
| A 150 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 150A | 4 | SHLD A150 | 25 | N | | | E21 | 25 | N | 14 13 | |
| A 150L | | J6-C | 19 | N | | 2 | P5-58 | 19 | N | 18 | 37 |
| A 150R | | J6-B | 19 | N | | 2 | P5-60 | 19 | N | 18 | 37 |
| A 151 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 151A | 4 | SHLD A151 | 25 | N | | | E21 | 25 | N | | |
| A 151L | | J6-E | 19 | N | | 2 | P5-57 | 19 | N | 18 | 37 |
| A 151R | | J6-D | 19 | N | | 2 | P5-61 | 19 | N | 18 | 37 |
| A 152 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 152A | 4 | SHLD A152 | 25 | N | | | E21 | 25 | N | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD CIRCUIT POINT | STRIP WIRE OR JACKET 2 | TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD CIRCUIT POINT | STRIP WIRE OR JACKET 2 | TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A 152L | | J6-G | 19 | N | | 2 | P5-56 | 19 | N | 18 | 37 |
| A 152R | | J6-F | 19 | N | | 2 | P5-62 | 19 | N | 18 | 37 |
| A 153 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 153A | 4 | SHLD A153 | 25 | N | | | E21 | 25 | N | | |
| A 153L | | J6-J | 19 | N | | 2 | P5-55 | 19 | N | 18 | 37 |
| A 153R | | J6-H | 19 | N | | 2 | P5-63 | 19 | N | 18 | 37 |
| A 154 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 154A | 4 | SHLD A154 | 25 | N | | | E21 | 25 | N | | |
| A 154L | | J6-L | 19 | N | | 2 | P5-54 | 19 | N | 18 | 37 |
| A 154R | | J6-K | 19 | N | | 2 | P5-64 | 19 | N | 18 | 37 |
| A 155 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 155A | 4 | SHLD A155 | 25 | N | | | E22 | 25 | N | 14 13 | |
| A 155L | | J6-N | 19 | N | | 2 | P5-42 | 19 | N | 18 | 37 |
| A 155R | | J6-M | 19 | N | | 2 | P5-44 | 19 | N | 18 | 37 |
| A 156 | 1 | | | | 8 9 | | | | | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD CIRCUIT POINT | STRIP WIRE OR JACKET 2 | TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD CIRCUIT POINT | STRIP WIRE OR JACKET 2 | TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A 145A | 4 | SHLD A145 | 25 | N | | | E20 | 25 | N | | |
| A 145L | | J5-EE | 19 | N | | 3 | P6-19 | 19 | N | 18 | 38 |
| A 145R | | J5-DD | 19 | N | | 3 | P6-24 | 19 | N | 18 | 38 |
| A 146 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 146A | 4 | SHLD A146 | 25 | N | | | E20 | 25 | N | | |
| A 146L | | J5-GG | 19 | N | | 3 | P9-38 | 19 | N | 18 | 9 |
| A 146R | | J5-FF | 19 | N | | 3 | P9-39 | 19 | N | 18 | 9 |
| A 147 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 147A | 4 | SHLD A147 | 25 | N | | | E20 | 25 | N | | |
| A 147L | | J5-JJ | 19 | N | | 3 | P6- 9 | 19 | N | 18 | 38 |
| A 147R | | J5-HH | 19 | N | | 3 | P6- 2 | 19 | N | 18 | 38 |
| A 148 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 148A | 4 | SHLD A148 | 25 | N | | | E20 | 25 | N | | |
| A 148L | | J5-LL | 19 | N | | 3 | P6-10 | 19 | N | 18 | 38 |
| A 148R | | J5-KK | 19 | N | | 3 | P6- 1 | 19 | N | 18 | 38 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD CIRCUIT POINT | STRIP WIRE OR JACKET 2 | TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD CIRCUIT POINT | STRIP WIRE OR JACKET 2 | TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | A 10 | | | | | A 11 | |
| A 156A | 4 | SHLD A156 | 25 | N | | | E22 | 25 | N | | |
| A 156L | | J6-R | 19 | N | | 2 | P5-41 | 19 | N | 18 | 37 |
| A 156R | | J6-P | 19 | N | | 2 | P5-45 | 19 | N | 18 | 37 |
| A 157 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 157A | 4 | SHLD A157 | 25 | N | | | E22 | 25 | N | | |
| A 157L | | J6-T | 19 | N | | 2 | P5-40 | 19 | N | 18 | 37 |
| A 157R | | J6-S | 19 | N | | 2 | P5-46 | 19 | N | 18 | 37 |
| A 158 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 158A | 4 | SHLD A158 | 25 | N | | | E22 | 25 | N | | |
| A 158L | | J6-V | 19 | N | | 2 | P5-39 | 19 | N | 18 | 37 |
| A 158R | | J6-U | 19 | N | | 2 | P5-47 | 19 | N | 18 | 37 |
| A 159 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 159A | 4 | SHLD A159 | 25 | N | | | E22 | 25 | N | | |
| A 159L | | J6-X | 19 | N | | 2 | P5-38 | 19 | N | 18 | 37 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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INCHES
0 1 2
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| CONDUCTOR | | | FROM | | | | | | TO | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 165 | 1 | | | | | | 8 9 | | | | | | | |
| | | | | | | | A 10 | | | | | | A 11 | |
| A 165A | 4 | | SHLD A165 | 25 | N | | | | E23 | 25 | N | | | |
| A 165L | | | J6-J* | 19 | N | | | 2 | P5-18 | 19 | N | | 18 | 37 |
| A 165R | | | J6-H* | 19 | N | | | 2 | P5- 5 | 19 | N | | 18 | 37 |
| A 166 | 3 | | J6-I* | 19 | N | | | 2 | P8-27 | | | | | 40 |
| A 167 | 3 | | J6-K* | 19 | N | | | 2 | P8-33 | | | | | 40 |
| A 168 | 1 | | | | | | 8 9 | | | | | | | |
| | | | | | | | A 10 | | | | | | A 11 | |
| A 168A | 4 | | SHLD A168 | 25 | N | | | | E23 | 25 | N | | | |
| A 168L | | | J6-N* | 19 | N | | | 2 | P5-37 | 19 | N | | 18 | 37 |
| A 168R | | | J6-M* | 19 | N | | | 2 | P5-49 | 19 | N | | 18 | 37 |
| A 169 | 1 | | | | | | 8 9 | | | | | | | |
| | | | | | | | A 10 | | | | | | A 11 | |
| A 169A | 4 | | SHLD A169 | 25 | N | | | | E24 | 25 | N | | 14 13 | |
| A 169L | | | J6-R* | 19 | N | | | 2 | P5-36 | 19 | N | | 18 | 37 |
| A 169R | | | J6-P* | 19 | N | | | 2 | P5-50 | 19 | N | | 18 | 37 |
| A 170 | 1 | | | | | | 8 9 | | | | | | | |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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MIL 2085 - 4-63 WIR

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR | | | FROM | | | | | | TO | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
| | | | | | | | A 10 | | | | | | A 11 | |
| A 170A | 4 | | SHLD A170 | 25 | N | | | | E24 | 25 | N | | | |
| A 170L | | | J6-T* | 19 | N | | | 2 | P5-29 | 19 | N | | 18 | 37 |
| A 170R | | | J6-S* | 19 | N | | | 2 | P5-14 | 19 | N | | 18 | 37 |
| A 171 | 1 | | | | | | 8 9 | | | | | | | |
| | | | | | | | A 10 | | | | | | A 11 | |
| A 171A | 4 | | SHLD A171 | 25 | N | | | | E24 | 25 | N | | | |
| A 171L | | | J6-V* | 19 | N | | | 2 | P9-42 | 19 | N | | 18 | 9 |
| A 171R | | | J6-U* | 19 | N | | | 2 | P9-43 | 19 | N | | 18 | 9 |
| A 172 | 1 | | | | | | 8 9 | | | | | | | |
| | | | | | | | A 10 | | | | | | A 11 | |
| A 172A | 4 | | SHLD A172 | 25 | N | | | | E24 | 25 | N | | | |
| A 172L | | | J6-X* | 19 | N | | | 2 | P5- 7 | 19 | N | | 18 | 37 |
| A 172R | | | J6-W* | 19 | N | | | 2 | P5- 4 | 19 | N | | 18 | 37 |
| A 173 | 1 | | | | | | 8 9 | | | | | | | |
| | | | | | | | A 10 | | | | | | A 11 | |
| A 173A | 4 | | SHLD A173 | 25 | N | | | | E24 | 25 | N | | | |
| A 173L | | | J6-Z* | 19 | N | | | 2 | P5- 8 | 19 | N | | 18 | 37 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS
SIZE A
1900097
SCALE-NONE REV LTR B SHEET 47 OF 78

MIL 2085 - 4-63 WIR

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR | | | FROM | | | | | | TO | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 159R | | | J6-W | 19 | N | | | 2 | P5-48 | 19 | N | | 18 | 37 |
| A 160 | 3 | | J6-Y | 19 | N | | | 2 | P7-27 | 19 | N | | 18 | 39 |
| A 161 | 3 | | J6-Z | 19 | N | | | 2 | P7-33 | 19 | N | | 18 | 39 |
| A 162 | 1 | | | | | | 8 9 | | | | | | | |
| | | | | | | | A 10 | | | | | | A 11 | |
| A 162A | 4 | | SHLD A162 | 25 | N | | | | E23 | 25 | N | | 14 13 | |
| A 162L | | | J6-C* | 19 | N | | | 2 | P5-53 | 19 | N | | 18 | 37 |
| A 162R | | | J6-B* | 19 | N | | | 2 | P5-65 | 19 | N | | 18 | 37 |
| A 163 | 1 | | | | | | 8 9 | | | | | | | |
| | | | | | | | A 10 | | | | | | A 11 | |
| A 163A | 4 | | SHLD A163 | 25 | N | | | | E23 | 25 | N | | | |
| A 163L | | | J6-E* | 19 | N | | | 2 | P5-52 | 19 | N | | 18 | 37 |
| A 163R | | | J6-D* | 19 | N | | | 2 | P5-66 | 19 | N | | 18 | 37 |
| A 164 | 1 | | | | | | 8 9 | | | | | | | |
| | | | | | | | A 10 | | | | | | A 11 | |
| A 164A | 4 | | SHLD A164 | 25 | N | | | | E23 | 25 | N | | | |
| A 164L | | | J6-G* | 19 | N | | | 2 | P5-17 | 19 | N | | 18 | 37 |
| A 164R | | | J6-F* | 19 | N | | | 2 | P5- 6 | 19 | N | | 18 | 37 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
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1900097
SCALE-NONE REV LTR B SHEET 45 OF 78

MIL 2085 - 4-63 WIR

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR | | | FROM | | | | | | TO | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 173R | | | J6-Y* | 19 | N | | | 2 | P5- 3 | 19 | N | | 18 | 37 |
| A 174 | 1 | | | | | | 8 9 | | | | | | | |
| | | | | | | | A 10 | | | | | | A 11 | |
| A 174A | 4 | | SHLD A174 | 25 | N | | | | E25 | 25 | N | | 14 13 | |
| A 174L | | | J6-CC | 19 | N | | | 2 | P5-30 | 19 | N | | 18 | 37 |
| A 174R | | | J6-BB | 19 | N | | | 2 | P5-13 | 19 | N | | 18 | 37 |
| A 175 | 1 | | | | | | 8 9 | | | | | | | |
| | | | | | | | A 10 | | | | | | A 11 | |
| A 175A | 4 | | SHLD A175 | 25 | N | | | | E25 | 25 | N | | | |
| A 175L | | | J6-EE | 19 | N | | | 2 | P5-19 | 19 | N | | 18 | 37 |
| A 175R | | | J6-DD | 19 | N | | | 2 | P5-24 | 19 | N | | 18 | 37 |
| A 176 | 1 | | | | | | 8 9 | | | | | | | |
| | | | | | | | A 10 | | | | | | A 11 | |
| A 176A | 4 | | SHLD A176 | 25 | N | | | | E25 | 25 | N | | | |
| A 176L | | | J6-GG | 19 | N | | | 2 | P9-49 | 19 | N | | 18 | 9 |
| A 176R | | | J6-FF | 19 | N | | | 2 | P9-50 | 19 | N | | 18 | 9 |
| A 177 | 1 | | | | | | 8 9 | | | | | | | |
| | | | | | | | A 10 | | | | | | A 11 | |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER
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1900097
SCALE-NONE REV LTR B SHEET 48 OF 78

MIL 2085 - 4-63 WIR

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

GCF WIRE HARNESS A B 1900097

| CONDUCTOR | | | FROM | | | | | | TO | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH | | | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | TERMINATION SPEC. 1 | | | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | TERMINATION SPEC 1 | | |
| NUMBER | ITEM NO. | 2 | CIRCUIT POINT | 2 | TIN | ITEM NO. | | NO. | CIRCUIT POINT | 2 | TIN | ITEM NO. | | NO. |
| A 181 | 1 | | | | | 8 | 9 | | | | | | | |
| | | | | | | A | 10 | | | | | A | 11 | |
| A 181A | 4 | | SHLD A181 | 25 | N | | | | E26 | 25 | N | | | |
| A 181L | | | J7-C | 19 | N | | | 1 | P1-58 | 19 | N | 18 | | 46 |
| A 181R | | | J7-B | 19 | N | | | 1 | P1-60 | 19 | N | 18 | | 46 |
| A 182 | 1 | | | | | 8 | 9 | | | | | | | |
| | | | | | | A | 10 | | | | | A | 11 | |
| A 182A | 4 | | SHLD A182 | 25 | N | | | | E26 | 25 | N | | | |
| A 182L | | | J7-E | 19 | N | | | 1 | P1-57 | 19 | N | 18 | | 46 |
| A 182R | | | J7-D | 19 | N | | | 1 | P1-61 | 19 | N | 18 | | 46 |
| A 183 | 1 | | | | | 8 | 9 | | | | | | | |
| | | | | | | A | 10 | | | | | A | 11 | |
| A 183A | 4 | | SHLD A183 | 25 | N | | | | E26 | 25 | N | | | |
| A 183L | | | J7-G | 19 | N | | | 1 | P1-56 | 19 | N | 18 | | 46 |
| A 183R | | | J7-F | 19 | N | | | 1 | P1-62 | 19 | N | 18 | | 46 |
| A 184 | 1 | | | | | 8 | 9 | | | | | | | |
| | | | | | | A | 10 | | | | | A | 11 | |
| A 184A | 4 | | SHLD A184 | 25 | N | | | | E26 | 25 | N | | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900097
SCALE-NONE | REV LTR B | SHEET 50 OF 78

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR | | | FROM | | | | | | TO | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH | | | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | TERMINATION SPEC. 1 | | | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | TERMINATION SPEC 1 | | |
| NUMBER | ITEM NO. | 2 | CIRCUIT POINT | 2 | TIN | ITEM NO. | | NO. | CIRCUIT POINT | 2 | TIN | ITEM NO. | | NO. |
| A 184L | | | J7-J | 19 | N | | | 1 | P1-55 | 19 | N | 18 | | 46 |
| A 184R | | | J7-H | 19 | N | | | 1 | P1-63 | 19 | N | 18 | | 46 |
| A 185 | 1 | | | | | 8 | 9 | | | | | | | |
| | | | | | | A | 10 | | | | | A | 11 | |
| A 185A | 4 | | SHLD A185 | 25 | N | | | | E26 | 25 | N | | | |
| A 185L | | | J7-L | 19 | N | | | 1 | P1-54 | 19 | N | 18 | | 46 |
| A 185R | | | J7-K | 19 | N | | | 1 | P1-64 | 19 | N | 18 | | 46 |
| A 186 | 1 | | | | | 8 | 9 | | | | | | | |
| | | | | | | A | 10 | | | | | A | 11 | |
| A 186A | 4 | | SHLD A186 | 25 | N | | | | E27 | 25 | N | 14 | 13 | |
| A 186L | | | J7-N | 19 | N | | | 1 | P2-58 | 19 | N | 18 | | 47 |
| A 186R | | | J7-M | 19 | N | | | 1 | P2-60 | 19 | N | 18 | | 47 |
| A 187 | 1 | | | | | 8 | 9 | | | | | | | |
| | | | | | | A | 10 | | | | | A | 11 | |
| A 187A | 4 | | SHLD A187 | 25 | N | | | | E27 | 25 | N | | | |
| A 187L | | | J7-R | 19 | N | | | 1 | P2-57 | 19 | N | 18 | | 47 |
| A 187R | | | J7-P | 19 | N | | | 1 | P2-61 | 19 | N | 18 | | 47 |
| A 188 | 1 | | | | | 8 | 9 | | | | | | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900097
SCALE-NONE | REV LTR B | SHEET 51 OF 78

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR | | | FROM | | | | | | TO | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH | | | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | TERMINATION SPEC. 1 | | | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | TERMINATION SPEC 1 | | |
| NUMBER | ITEM NO. | 2 | CIRCUIT POINT | 2 | TIN | ITEM NO. | | NO. | CIRCUIT POINT | 2 | TIN | ITEM NO. | | NO. |
| A 177A | 4 | | SHLD A177 | 25 | N | | | | E25 | 25 | N | | | |
| A 177L | | | J6-JJ | 19 | N | | | 2 | P5- 9 | | | | | 37 |
| A 177R | | | J6-HH | 19 | N | | | 2 | P5- 2 | | | | | 37 |
| A 178 | 1 | | | | | 8 | 9 | | | | | | | |
| | | | | | | A | 10 | | | | | A | 11 | |
| A 178A | 4 | | SHLD A178 | 25 | N | | | | E25 | 25 | N | | | |
| A 178L | | | J6-LL | 19 | N | | | 2 | P5-10 | 19 | N | 18 | | 37 |
| A 178R | | | J6-KK | 19 | N | | | 2 | P5- 1 | 19 | N | 18 | | 37 |
| A 179 | 1 | | | | | 8 | 9 | | | | | | | |
| | | | | | | A | 10 | | | | | A | 11 | |
| A 179A | 4 | | SHLD A179 | 25 | N | | | | E25 | 25 | N | | | |
| A 179L | | | J6-NN | 19 | N | | | 2 | P5-20 | 19 | N | 18 | | 37 |
| A 179R | | | J6-MM | 19 | N | | | 2 | P5-23 | 19 | N | 18 | | 37 |
| A 180 | 1 | | | | | 8 | 9 | | | | | | | |
| | | | | | | A | 10 | | | | | A | 11 | |
| A 180A | 4 | | SHLD A180 | 25 | N | | | | E26 | 25 | N | 14 | 13 | |
| A 180L | | | J7-A* | 19 | N | | | 1 | P10-52 | 19 | N | 18 | | 7 |
| A 180R | | | J7-A | 19 | N | | | 1 | P10-53 | 19 | N | 18 | | 7 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900097
SCALE-NONE | REV LTR B | SHEET 49 OF 78

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| CONDUCTOR | | | FROM | | | | | | TO | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH | | | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | TERMINATION SPEC. 1 | | | CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | TERMINATION SPEC 1 | | |
| NUMBER | ITEM NO. | 2 | CIRCUIT POINT | 2 | TIN | ITEM NO. | | NO. | CIRCUIT POINT | 2 | TIN | ITEM NO. | | NO. |
| | | | | | | A | 10 | | | | | A | 11 | |
| A 188A | 4 | | SHLD A188 | 25 | N | | | | E27 | 25 | N | | | |
| A 188L | | | J7-T | 19 | N | | | 1 | P2-56 | 19 | N | 18 | | 47 |
| A 188R | | | J7-S | 19 | N | | | 1 | P2-62 | 19 | N | 18 | | 47 |
| A 189 | 1 | | | | | 8 | 9 | | | | | | | |
| | | | | | | A | 10 | | | | | A | 11 | |
| A 189A | 4 | | SHLD A189 | 25 | N | | | | E27 | 25 | N | | | |
| A 189L | | | J7-V | 19 | N | | | 1 | P2-55 | 19 | N | 18 | | 47 |
| A 189R | | | J7-U | 19 | N | | | 1 | P2-63 | 19 | N | 18 | | 47 |
| A 190 | 1 | | | | | 8 | 9 | | | | | | | |
| | | | | | | A | 10 | | | | | A | 11 | |
| A 190A | 4 | | SHLD A190 | 25 | N | | | | E27 | 25 | N | | | |
| A 190L | | | J7-X | 19 | N | | | 1 | P2-54 | 19 | N | 18 | | 47 |
| A 190R | | | J7-W | 19 | N | | | 1 | P2-64 | 19 | N | 18 | | 47 |
| A 191 | 1 | | | | | 8 | 9 | | | | | | | |
| | | | | | | A | 10 | | | | | A | 11 | |
| A 191A | 4 | | SHLD A191 | 25 | N | | | | E27 | 25 | N | | | |
| A 191L | | | J7-Z | 19 | N | | | 1 | P10-48 | 19 | N | 18 | | 7 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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MIL 2085 - 4-63 WIR

INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

GCF WIRE HARNESS A B 1900097

| CONDUCTOR | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH NUMBER | ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 195A | 4 | SHLD A195 | 25 | N | | | E28 | 25 | N | | |
| A 195L | | J7-J* | 19 | N | | 1 | P1-18 | 19 | N | 18 | 46 |
| A 195R | | J7-H* | 19 | N | | 1 | P1- 5 | 19 | N | 18 | 46 |
| A 196 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 196A | 4 | SHLD A196 | 25 | N | | | E28 | 25 | N | | |
| A 196L | | J7-K* | 19 | N | | 1 | P10-59 | 19 | N | 18 | 7 |
| A 196R | | J7-I* | 19 | N | | 1 | P10-60 | 19 | N | 18 | 7 |
| A 197 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 197A | 4 | SHLD A197 | 25 | N | | | E28 | 25 | N | | |
| A 197L | | J7-N* | 19 | N | | 1 | P2-53 | 19 | N | 18 | 47 |
| A 197R | | J7-M* | 19 | N | | 1 | P2-65 | 19 | N | 18 | 47 |
| A 198 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 198A | 4 | SHLD A198 | 25 | N | | | E29 | 25 | N | 14 13 | |
| A 198L | | J7-R* | 19 | N | | 1 | P2-52 | 19 | N | 18 | 47 |
| A 198R | | J7-P* | 19 | N | | 1 | P2-66 | 19 | N | 18 | 47 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900097
SCALE - NONE | REV LTR B | SHEET 54 OF 78

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH NUMBER | ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 199 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 199A | 4 | SHLD A199 | 25 | N | | | E29 | 25 | N | | |
| A 199L | | J7-T* | 19 | N | | 1 | P2-17 | 19 | N | 18 | 47 |
| A 199R | | J7-S* | 19 | N | | 1 | P2- 6 | 19 | N | 18 | 47 |
| A 200 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 200A | 4 | SHLD A200 | 25 | N | | | E29 | 25 | N | | |
| A 200L | | J7-V* | 19 | N | | 1 | P2-18 | 19 | N | 18 | 47 |
| A 200R | | J7-U* | 19 | N | | 1 | P2- 5 | 19 | N | 18 | 47 |
| A 201 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 201A | 4 | SHLD A201 | 25 | N | | | E29 | 25 | N | | |
| A 201L | | J7-X* | 19 | N | | 1 | P1- 7 | 19 | N | 18 | 46 |
| A 201R | | J7-W* | 19 | N | | 1 | P1- 4 | 19 | N | 18 | 46 |
| A 202 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 202A | 4 | SHLD A202 | 25 | N | | | E29 | 25 | N | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
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SCALE - NONE | REV LTR B | SHEET 55 OF 78

MIL 2085 - 4-63 WIR

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH NUMBER | ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 191R | | J7-Y | 19 | N | | 1 | P10-49 | 19 | N | 18 | 7 |
| A 192 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 192A | 4 | SHLD A192 | 25 | N | | | E28 | 25 | N | 14 13 | |
| A 192L | | J7-C* | 19 | N | | 1 | P1-53 | 19 | N | 18 | 46 |
| A 192R | | J7-B* | 19 | N | | 1 | P1-65 | 19 | N | 18 | 46 |
| A 193 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 193A | 4 | SHLD A193 | 25 | N | | | E28 | 25 | N | | |
| A 193L | | J7-E* | 19 | N | | 1 | P1-52 | 19 | N | 18 | 46 |
| A 193R | | J7-D* | 19 | N | | 1 | P1-66 | 19 | N | 18 | 46 |
| A 194 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 194A | 4 | SHLD A194 | 25 | N | | | E28 | 25 | N | | |
| A 194L | | J7-G* | 19 | N | | 1 | P1-17 | 19 | N | 18 | 46 |
| A 194R | | J7-F* | 19 | N | | 1 | P1- 6 | 19 | N | 18 | 46 |
| A 195 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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SCALE - NONE | REV LTR B | SHEET 53 OF 78

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH NUMBER | ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 202L | | J7-Z* | 19 | N | | 1 | P1- 8 | 19 | N | 18 | 46 |
| A 202R | | J7-Y* | 19 | N | | 1 | P1- 3 | 19 | N | 18 | 46 |
| A 203 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 203A | 4 | SHLD A203 | 25 | N | | | E29 | 25 | N | | |
| A 203L | | J7-PP | 19 | N | | 1 | P10-63 | 19 | N | 18 | 7 |
| A 203R | | J7-AA | 19 | N | | 1 | P10-64 | 19 | N | 18 | 7 |
| A 204 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 204A | 4 | SHLD A204 | 25 | N | | | E30 | 25 | N | 14 13 | |
| A 204L | | J7-CC | 19 | N | | 1 | P2- 7 | 19 | N | 18 | 47 |
| A 204R | | J7-BB | 19 | N | | 1 | P2- 4 | 19 | N | 18 | 47 |
| A 205 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 205A | 4 | SHLD A205 | 25 | N | | | E30 | 25 | N | | |
| A 205L | | J7-EE | 19 | N | | 1 | P2- 8 | 19 | N | | 47 |
| A 205R | | J7-DD | 19 | N | | 1 | P2- 3 | 19 | N | | 47 |
| A 206 | 1 | | | | 8 9 | | | | | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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SCALE - NONE | REV LTR B | SHEET 56 OF 78

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INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

GCF WIRE HARNESS A B 1900097

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | 2 | TIN | TERMINATION SPEC. ITEM NO. | NO. | TO CIRCUIT POINT | 2 | TIN | TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A 209R | | J7-MM | 19 | N | | 1 | P2- 1 | 19 | N | 18 | 47 |
| A 210 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 210A | 4 | SHLD A210 | 25 | N | | | E51 | 25 | N | | |
| A 210L | | J8-J | 19 | N | | 11 | J9-J | 19 | N | 18 | 12 |
| A 210R | | J8-H | 19 | N | | 11 | J9-H | 19 | N | 18 | 12 |
| A 211 | 2 | | | | 12 | | | | | 6 7 11 | |
| A 211B | 4 | E47 | 25 | N | | 48 | SHLD A211 | 25 | N | | |
| A 211W | | J8-M | 19 | N | 18 | 11 | S3SW2-NO | 25 | Y | | 28 |
| A 212 | 3 | J8-C | 19 | N | 18 | 11 | E36 | 25 | N | | |
| A 213 | 3 | J8-B | 19 | N | 18 | 11 | E35 | 25 | N | | |
| A 214 | 3 | J8-D | 19 | N | 18 | 11 | E37 | 25 | N | | |
| A 215 | 3 | J9-C | 19 | N | 18 | 12 | E36 | 25 | N | | |
| A 216 | 3 | J9-B | 19 | N | 18 | 12 | E35 | 25 | N | | |
| A 217 | 1 | | | | | | | | | 8 9 | |
| | | | | | A 11 | | | | | A 10 | |
| A 217B | 4 | E45 | | | | 48 | SHLD A217 | 25 | N | | |
| A 217L | | J9-N | 19 | N | | 12 | S7- 2B | 25 | Y | | 23 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900097
SCALE - NONE | REV LTR B | SHEET 58 OF 78

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | 2 | TIN | TERMINATION SPEC. ITEM NO. | NO. | TO CIRCUIT POINT | 2 | TIN | TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A 217R | | J9-M | 19 | N | | 12 | S7- 2A | 25 | Y | | 23 |
| A 218 | 1 | | | | | | | | | 8 9 | |
| | | | | | A 11 | | | | | A 10 | |
| A 218B | 4 | E47 | 25 | N | | 48 | SHLD A218 | 25 | N | | |
| A 218L | | J9-R | 19 | N | 18 | 12 | S6SW2-NO | 25 | Y | | 31 |
| A 218R | | J9-P | 19 | N | 18 | 12 | S6SW1-NO | 25 | Y | | 31 |
| A 219 | 3 | J10-C | 19 | N | 18 | 16 | E36 | 25 | N | | |
| A 220 | 3 | J10-B | 19 | N | 18 | 16 | E35 | 25 | N | | |
| A 221 | 3 | J10-D | 19 | N | 18 | 16 | E37 | 25 | N | | |
| A 222 | 1 | | | | | | | | | 8 9 | |
| | | | | | A 11 | | | | | A 10 | |
| A 222B | 4 | E48 | 25 | N | 14 13 | | SHLD A222 | 25 | N | | |
| A 222L | | J10-R | 19 | N | 18 | 16 | P9- 3 | 19 | N | 19 | 9 |
| A 222R | | J10-P | 19 | N | 18 | 16 | P9- 4 | 19 | N | 19 | 9 |
| A 223 | 1 | | | | | | | | | 8 9 | |
| | | | | | A 11 | | | | | A 10 | |
| A 223B | 4 | E45 | 25 | N | | 48 | SHLD A223 | 25 | N | | |
| A 223L | | J10-N | 19 | N | | 16 | S7- 4B | 25 | Y | | 23 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900097
SCALE - NONE | REV LTR B | SHEET 59 OF 78

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | 2 | TIN | TERMINATION SPEC. ITEM NO. | NO. | TO CIRCUIT POINT | 2 | TIN | TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | A 10 | | | | | A 11 | |
| A 206A | 4 | SHLD A206 | 25 | N | | | E30 | 25 | N | | |
| A 206L | | J7-GG | 19 | N | | 1 | P2- 9 | 19 | N | 18 | 47 |
| A 206R | | J7-FF | 19 | N | | 1 | P2- 2 | 19 | N | 18 | 47 |
| A 207 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 207A | 4 | SHLD A207 | 25 | N | | | E30 | 25 | N | | |
| A 207L | | J7-JJ | 19 | N | | 1 | P1- 9 | 19 | N | 18 | 46 |
| A 207R | | J7-HH | 19 | N | | 1 | P1- 2 | 19 | N | 18 | 46 |
| A 208 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 208A | 4 | SHLD A208 | 25 | N | | | E30 | 25 | N | | |
| A 208L | | J7-LL | 19 | N | | 1 | P1-10 | 19 | N | 18 | 46 |
| A 208R | | J7-KK | 19 | N | | 1 | P1- 1 | 19 | N | 18 | 46 |
| A 209 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 209A | 4 | SHLD A209 | 25 | N | | | E30 | 25 | N | | |
| A 209L | | J7-NN | 19 | N | | 1 | P2-10 | 19 | N | 18 | 47 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900097
SCALE - NONE | REV LTR B | SHEET 57 OF 78

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | 2 | TIN | TERMINATION SPEC. ITEM NO. | NO. | TO CIRCUIT POINT | 2 | TIN | TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A 223R | | J10-M | 19 | N | | 16 | S7- 4A | 25 | Y | | 23 |
| A 224 | 3 | J11-C | 19 | N | 18 | 21 | E36 | 25 | N | | |
| A 225 | 3 | J11-B | 19 | N | 18 | 21 | E35 | 25 | N | | |
| A 226 | 3 | J11-D | 19 | N | 18 | 21 | E37 | 25 | N | | |
| A 227 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 227A | 4 | SHLD A227 | 25 | N | | | E51 | 25 | N | 14 13 | |
| A 227L | | J11-J | 19 | N | | 21 | J12-J | 19 | N | 18 | 19 |
| A 227R | | J11-H | 19 | N | | 21 | J12-H | 19 | N | 18 | 19 |
| A 228 | 2 | | | | 12 | | | | | 6 7 11 | |
| A 228B | 4 | E47 | 25 | N | | 48 | SHLD A228 | 25 | N | | |
| A 228W | | J11-M | 19 | N | 18 | 21 | S3SW1-NO | 25 | Y | | 28 |
| A 229 | 3 | J12-C | 19 | N | 18 | 19 | E36 | 25 | N | | |
| A 230 | 3 | J12-B | 19 | N | 18 | 19 | E35 | 25 | N | | |
| A 231 | 1 | | | | | | | | | 8 9 | |
| | | | | | A 11 | | | | | A 10 | |
| A 231B | 4 | E47 | 25 | N | 14 13 | 48 | SHLD A231 | 25 | N | | |
| A 231L | | J12-R | 19 | N | 18 | 19 | S6SW2-NC | 25 | Y | | 31 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

GCF WIRE HARNESS A B 1900097

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | FROM TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TO TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A 237W | | J13-H | 19 | N | 18 | 17 | G1- 3 | 25 | Y | | 36 |
| A 238 | 1 | | | | | | | | | 8 9 | |
| | | | | | A 11 | | | | | A 10 | |
| A 238B | 4 | E46 | 25 | N | | 48 | SHLD A238 | 25 | N | | |
| A 238L | | J13-J | 19 | N | 18 | 17 | G1- 4 | 25 | Y | | 36 |
| A 238R | | J13-U | 19 | N | 18 | 17 | G1- 2 | 25 | Y | | 36 |
| A 239 | 1 | | | | | | | | | 8 9 | |
| | | | | | A 11 | | | | | A 10 | |
| A 239B | 4 | E45 | 25 | N | 14 13 | 48 | SHLD A239 | 25 | N | | |
| A 239L | | J13-N | 19 | N | | 17 | S7- 5B | 25 | Y | | 23 |
| A 239R | | J13-M | 19 | N | | 17 | S7- 5A | 25 | Y | | 23 |
| A 240 | 1 | | | | | | | | | 8 9 | |
| | | | | | A 11 | | | | | A 10 | |
| A 240B | 4 | E45 | 25 | N | | 48 | SHLD A240 | 25 | N | | |
| A 240L | | J13-R | 19 | N | | 17 | S7- 3B | 25 | Y | | 23 |
| A 240R | | J13-P | 19 | N | | 17 | S7- 3A | 25 | Y | | 23 |
| A 241 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | FROM TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TO TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A 241A | 4 | SHLD A241 | 25 | N | | | E31 | 25 | N | 14 13 | 45 |
| A 241L | | P1-16 | 19 | N | 19 | 46 | S8- 2B | 25 | Y | | 22 |
| A 241R | | P1-12 | 19 | N | 19 | 46 | S8- 2A | 25 | Y | | 22 |
| A 242 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 242A | 4 | SHLD A242 | 25 | N | | | E31 | 25 | N | | 45 |
| A 242L | | P1-16 | 19 | N | | 46 | P10-56 | 19 | N | 18 | 7 |
| A 242R | | P1-12 | 19 | N | | 46 | P10-58 | 19 | N | 18 | 7 |
| A 243 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 243A | 4 | SHLD A243 | 25 | N | | | E31 | 25 | N | | 45 |
| A 243L | | P1-28 | 19 | N | 18 | 46 | P10-55 | 19 | N | 18 | 7 |
| A 243R | | P1-22 | 19 | N | 18 | 46 | P10-57 | 19 | N | 18 | 7 |
| A 244 | 3 | P1-26 | 19 | N | 18 | 46 | P10-62 | 19 | N | 18 | 7 |
| A 245 | 3 | P1-32 | 19 | N | 18 | 46 | P10-61 | 19 | N | 18 | 7 |
| A 246 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 246A | 4 | SHLD A246 | 25 | N | | | E32 | 25 | N | 14 13 | 44 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | FROM TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TO TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A 231R | | J12-P | 19 | N | 18 | 19 | S6SW1-NC | 25 | Y | | 31 |
| A 232 | 1 | | | | | | | | | 8 9 | |
| | | | | | A 11 | | | | | A 10 | |
| A 232B | 4 | E45 | 25 | N | | 48 | SHLD A232 | 25 | N | | |
| A 232L | | J12-N | 19 | N | | 19 | S7- 6B | 25 | Y | | 23 |
| A 232R | | J12-M | 19 | N | | 19 | S7- 6A | 25 | Y | | 23 |
| A 233 | 3 | J13-C | 19 | N | 18 | 17 | E36 | 25 | N | | |
| A 234 | 3 | J13-B | 19 | N | 18 | 17 | E35 | 25 | N | | |
| A 235 | 2 | | | | 12 | | | | | 6 7 11 | |
| A 235B | 4 | E46 | 25 | N | 14 13 | 48 | SHLD A235 | 25 | N | | |
| A 235W | | J13-E | 19 | N | 18 | 17 | G2- 3 | 25 | Y | | 41 |
| A 236 | 1 | | | | | | | | | 8 9 | |
| | | | | | A 11 | | | | | A 10 | |
| A 236B | 4 | E46 | 25 | N | | 48 | SHLD A236 | 25 | N | | |
| A 236L | | J13-F | 19 | N | 18 | 17 | G2- 4 | 25 | Y | | 41 |
| A 236R | | J13-S | 19 | N | 18 | 17 | G2- 2 | 25 | Y | | 41 |
| A 237 | 2 | | | | 12 | | | | | 6 7 11 | |
| A 237B | 4 | E46 | 25 | N | | 48 | SHLD A237 | 25 | N | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
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GCF WIRE HARNESS A B 1900097

| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | FROM TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TO TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A 246L | | P2-16 | 19 | N | 19 | 47 | S8- 3B | 25 | Y | | 22 |
| A 246R | | P2-12 | 19 | N | 19 | 47 | S8- 3A | 25 | Y | | 22 |
| A 247 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 247A | 4 | SHLD A247 | 25 | N | | | E32 | 25 | N | | 44 |
| A 247L | | P2-16 | 19 | N | | 47 | P10-45 | 19 | N | 18 | 7 |
| A 247R | | P2-12 | 19 | N | | 47 | P10-47 | 19 | N | 18 | 7 |
| A 248 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 248A | 4 | SHLD A248 | 25 | N | | | E32 | 25 | N | | 44 |
| A 248L | | P2-28 | 19 | N | 18 | 47 | P10-44 | 19 | N | 18 | 7 |
| A 248R | | P2-22 | 19 | N | 18 | 47 | P10-46 | 19 | N | 18 | 7 |
| A 249 | 3 | P2-26 | 19 | N | 18 | 47 | P10-51 | 19 | N | 18 | 7 |
| A 250 | 3 | P2-32 | 19 | N | 18 | 47 | P10-50 | 19 | N | 18 | 7 |
| A 251 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 251A | 4 | SHLD A251 | 25 | N | | | E33 | 25 | N | 14 13 | 43 |
| A 251L | | P3-16 | 19 | N | 19 | 49 | S8- 4B | 25 | Y | | 22 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

GCF WIRE HARNESS A B 1900097

| CONDUCTOR | | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | CUT WIRE OR SH'ELD / STRIP WIRE OR JACKET / CIRCUIT POINT | 2 | TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | 2 | TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 257 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 257A | 4 | | SHLD A257 | 25 | N | | | E34 | 25 | N | | 42 |
| A 257L | | | P4-16 | 19 | N | | 50 | P10-23 | 19 | N | 18 | 7 |
| A 257R | | | P4-12 | 19 | N | | 50 | P10-25 | 19 | N | 18 | 7 |
| A 258 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 258A | 4 | | SHLD A258 | 25 | N | | | E34 | 25 | N | | 42 |
| A 258L | | | P4-28 | 19 | N | 18 | 50 | P10-22 | 19 | N | 18 | 7 |
| A 258R | | | P4-22 | 19 | N | 18 | 50 | P10-24 | 19 | N | 18 | 7 |
| A 259 | 3 | | P4-26 | 19 | N | 18 | 50 | P10-28 | 19 | N | 18 | 7 |
| A 260 | 3 | | P4-32 | 19 | N | 18 | 50 | P10-29 | 19 | N | 18 | 7 |
| A 261 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 261A | 4 | | SHLD A261 | 25 | N | | | E31 | 25 | N | | 45 |
| A 261L | | | P5-16 | 19 | N | 19 | 37 | S8- 6B | 25 | Y | | 22 |
| A 261R | | | P5-12 | 19 | N | 19 | 37 | S8- 6A | 25 | Y | | 22 |
| A 262 | 1 | | | | | 8 9 | | | | | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900097
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GCF WIRE HARNESS A B 1900097

| CONDUCTOR | | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | 2 | TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | 2 | TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
| | | | | | | A 10 | | | | | A 11 | |
| A 262A | 4 | | SHLD A262 | 25 | N | | | E31 | 25 | N | | 45 |
| A 262L | | | P5-16 | 19 | N | | 37 | P9-46 | 19 | N | 18 | 9 |
| A 262R | | | P5-12 | 19 | N | | 37 | P9-48 | 19 | N | 18 | 9 |
| A 263 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 263A | 4 | | SHLD A263 | 25 | N | | | E31 | 25 | N | | 45 |
| A 263L | | | P5-28 | 19 | N | 18 | 37 | P9-45 | 19 | N | 18 | 9 |
| A 263R | | | P5-22 | 19 | N | 18 | 37 | P9-47 | 19 | N | 18 | 9 |
| A 264 | 3 | | P5-26 | 19 | N | 18 | 37 | P9-41 | 19 | N | 18 | 9 |
| A 265 | 3 | | P5-32 | 19 | N | 18 | 37 | P9-40 | 19 | N | 18 | 9 |
| A 266 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 266A | 4 | | SHLD A266 | 25 | N | | | E32 | 25 | N | | 44 |
| A 266L | | | P6-16 | 19 | N | 19 | 38 | S8- 7B | 25 | Y | | 22 |
| A 266R | | | P6-12 | 19 | N | 19 | 38 | S8- 7A | 25 | Y | | 22 |
| A 267 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR | | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | 2 | TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | 2 | TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 251R | | | P3-12 | 19 | N | 19 | 49 | S8- 4A | 25 | Y | | 22 |
| A 252 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 252A | 4 | | SHLD A252 | 25 | N | | | E33 | 25 | N | | 43 |
| A 252L | | | P3-16 | 19 | N | | 49 | P10-34 | 19 | N | 18 | 7 |
| A 252R | | | P3-12 | 19 | N | | 49 | P10-36 | 19 | N | 18 | 7 |
| A 253 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 253A | 4 | | SHLD A253 | 25 | N | | | E33 | 25 | N | | 43 |
| A 253L | | | P3-28 | 19 | N | 18 | 49 | P10-33 | 19 | N | 18 | 7 |
| A 253R | | | P3-22 | 19 | N | 18 | 49 | P10-35 | 19 | N | 18 | 7 |
| A 254 | 3 | | P3-26 | 19 | N | 18 | 49 | P10-40 | 19 | N | 18 | 7 |
| A 255 | 3 | | P3-32 | 19 | N | 18 | 49 | P10-39 | 19 | N | 18 | 7 |
| A 256 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 256A | 4 | | SHLD A256 | 25 | N | | | E34 | 25 | N | 14 13 | 42 |
| A 256L | | | P4-16 | 19 | N | 19 | 50 | S8- 5B | 25 | Y | | 22 |
| A 256R | | | P4-12 | 19 | N | 19 | 50 | S8- 5A | 25 | Y | | 22 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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SCALE-NONE | REV LTR B | SHEET 65 OF 78

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR | | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | 2 | TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | 2 | TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 267A | 4 | | SHLD A267 | 25 | N | | | E32 | 25 | N | | 44 |
| A 267L | | | P6-16 | 19 | N | | 38 | P9-35 | 19 | N | 18 | 9 |
| A 267R | | | P6-12 | 19 | N | | 38 | P9-37 | 19 | N | 18 | 9 |
| A 268 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 268A | 4 | | SHLD A268 | 25 | N | | | E32 | 25 | N | | 44 |
| A 268L | | | P6-28 | 19 | N | 18 | 38 | P9-34 | 19 | N | 18 | 9 |
| A 268R | | | P6-22 | 19 | N | 18 | 38 | P9-36 | 19 | N | 18 | 9 |
| A 269 | 3 | | P6-26 | 19 | N | 18 | 38 | P9-30 | 19 | N | 18 | 9 |
| A 270 | 3 | | P6-32 | 19 | N | 18 | 38 | P9-29 | 19 | N | 18 | 9 |
| A 271 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 271A | 4 | | SHLD A271 | 25 | N | | | E33 | 25 | N | | 43 |
| A 271L | | | P7-16 | 19 | N | 19 | 39 | S8- 8B | 25 | Y | | 22 |
| A 271R | | | P7-12 | 19 | N | 19 | 39 | S8- 8A | 25 | Y | | 22 |
| A 272 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 272A | 4 | | SHLD A272 | 25 | N | | | E33 | 25 | N | | 43 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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SCALE-NONE | REV LTR B | SHEET 68 OF 78

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INCHES
0 1 2
PHOTOGRAPHIC SCALE ONLY

GCF WIRE HARNESS A B 1900097

| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH | FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. ITEM NO. | NO. | TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | 2 | T I N | TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 277R | | | P8-12 | 19 | N | | 40 | P9-15 | 19 | N | 18 | 9 |
| A 278 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 278A | 4 | | SHLD A278 | 25 | N | | | E34 | 25 | N | | 42 |
| A 278L | | | P8-28 | 19 | N | 18 | 40 | P9-12 | 19 | N | 18 | 9 |
| A 278R | | | P8-22 | 19 | N | 18 | 40 | P9-14 | 19 | N | 18 | 9 |
| A 279 | 3 | | P8-26 | 19 | N | 18 | 40 | P9- 6 | 19 | N | 18 | 9 |
| A 280 | 3 | | P8-32 | 19 | N | 18 | 40 | P9- 7 | 19 | N | 18 | 9 |
| A 281 | 2 | | | | | 6 7 11 | | | | | 12 | |
| A 281A | 4 | | SHLD A281 | 25 | N | | | E47 | 25 | N | | 48 |
| A 281W | | | P9- 1 | 19 | N | 18 | 9 | S6SW2-NC | 25 | Y | | 31 |
| A 282 | 2 | | | | | | | | | | | |
| A 282A | 4 | | SHLD A282 | 25 | N | | | E47 | 25 | N | | 48 |
| A 282W | | | P9- 2 | 19 | N | 18 | 9 | S3SW2-C | 25 | Y | | 28 |
| A 283 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 283A | 4 | | SHLD A283 | 25 | N | | | E46 | 25 | N | | 48 |
| A 283L | | | P9- 3 | 19 | N | | 9 | G2- 5 | 25 | Y | | 41 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH | FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. ITEM NO. | NO. | TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | 2 | T I N | TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 283R | | | P9- 4 | 19 | N | | 9 | G2- 1 | 25 | Y | | 41 |
| A 284 | 2 | | | | | 6 7 11 | | | | | 12 | |
| A 284A | 4 | | SHLD A284 | 25 | N | | | E47 | 25 | N | | 48 |
| A 284W | | | P9- 5 | 19 | N | 18 | 9 | S3SW1-C | 25 | Y | | 28 |
| A 285 | 3 | | S1SW1-C | 25 | Y | | 24 | S1SW2-C | 25 | Y | | 24 |
| A 286 | 3 | | S1SW2-NC | 25 | Y | | 24 | XDS1-C | 25 | Y | | 25 |
| A 287 | 3 | | S1SW2-NO | 25 | Y | | 24 | XDS1-A | 25 | Y | | 25 |
| A 288 | 3 | | S2SW1-C | 25 | Y | | 26 | S2SW2-C | 25 | Y | | 26 |
| A 289 | 3 | | S2SW2-NC | 25 | Y | | 26 | XDS2-C | 25 | Y | | 27 |
| A 290 | 3 | | S2SW2-NO | 25 | Y | | 26 | XDS2-A | 25 | Y | | 27 |
| A 291 | 3 | | S3SW3-NO | 25 | Y | | 28 | XDS3-A | 25 | Y | | 29 |
| A 292 | 3 | | S3SW3-NC | 25 | Y | | 28 | XDS3-C | 25 | Y | | 29 |
| A 293 | 3 | | S4SW1-C | 25 | Y | | 35 | S4SW2-C | 25 | Y | | 35 |
| A 294 | 3 | | S4SW2-NC | 25 | Y | | 35 | XDS4-C | 25 | Y | | 34 |
| A 295 | 3 | | S4SW2-NO | 25 | Y | | 35 | XDS4-A | 25 | Y | | 34 |
| A 296 | 3 | | S5SW1-C | 25 | Y | | 33 | S5SW2-C | 25 | Y | | 33 |
| A 297 | 3 | | S5SW2-NC | 25 | Y | | 33 | XDS5-C | 25 | Y | | 32 |
| A 298 | 3 | | S5SW2-NO | 25 | Y | | 33 | XDS5-A | 25 | Y | | 32 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH | FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. ITEM NO. | NO. | TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | 2 | T I N | TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 272L | | | P7-16 | 19 | N | | 39 | P9-24 | 19 | N | 18 | 9 |
| A 272R | | | P7-12 | 19 | N | | 39 | P9-26 | 19 | N | 18 | 9 |
| A 273 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 273A | 4 | | SHLD A273 | 25 | N | | | E33 | 25 | N | | 43 |
| A 273L | | | P7-28 | 19 | N | 18 | 39 | P9-23 | 19 | N | 18 | 9 |
| A 273R | | | P7-22 | 19 | N | 18 | 39 | P9-25 | 19 | N | 18 | 9 |
| A 274 | 3 | | P7-32 | 19 | N | 18 | 39 | P9-19 | 19 | N | 18 | 9 |
| A 275 | 3 | | P7-26 | 19 | N | 18 | 39 | P9-18 | 19 | N | 18 | 9 |
| A 276 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 276A | 4 | | SHLD A276 | 25 | N | | | E34 | 25 | N | | 42 |
| A 276L | | | P8-16 | 19 | N | 19 | 40 | S8- 9B | 25 | Y | | 22 |
| A 276R | | | P8-12 | 19 | N | 19 | 40 | S8- 9A | 25 | Y | | 22 |
| A 277 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 277A | 4 | | SHLD A277 | 25 | N | | | E34 | 25 | N | | 42 |
| A 277L | | | P8-16 | 19 | N | | 40 | P9-13 | 19 | N | 18 | 9 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH | FROM CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. ITEM NO. | NO. | TO CUT WIRE OR SHIELD / STRIP WIRE OR JACKET / CIRCUIT POINT | 2 | T I N | TERMINATION SPEC ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 299 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 299A | 4 | | SHLD A299 | 25 | N | | | E47 | 25 | N | | 48 |
| A 299L | | | S6SW2-C | 25 | Y | | 31 | G1- 5 | 25 | Y | | 36 |
| A 299R | | | S6SW1-C | 25 | Y | | 31 | G1- 1 | 25 | Y | | 36 |
| A 300 | 3 | | S6SW3-NC | 25 | Y | | 31 | XDS6-C | 25 | Y | | 30 |
| A 301 | 3 | | S6SW3-NO | 25 | Y | | 31 | XDS6-A | 25 | Y | | 30 |
| A 302 | 3 | | S6SW1-NC | 25 | Y | | 31 | S3SW1-NC | 25 | Y | | 28 |
| A 303 | 3 | | S6SW1-NO | 25 | Y | | 31 | S3SW2-NC | 25 | Y | | 28 |
| A 304 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 304A | 4 | | SHLD A304 | 25 | N | | | E45 | 25 | N | | 48 |
| A 304L | | | S7-11B | 25 | Y | | 23 | T2- 3 | 25 | Y | 21 | 18 |
| A 304R | | | S7-11A | 25 | Y | | 23 | T2- 1 | 25 | Y | 21 | 18 |
| A 305 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 305A | 4 | | SHLD A305 | 25 | N | | | E45 | 25 | N | | 48 |
| A 305L | | | S8-11B | 25 | Y | | 22 | T1- 3 | 25 | Y | 21 | 20 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
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INCHES
0 1 2
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GCF WIRE HARNESS A B 1900097

| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | FROM CIRCUIT POINT | 2 | T/IN | FROM TERMINATION SPEC. 1 ITEM NO. | FROM NO. | TO CIRCUIT POINT | 2 | T/IN | TO TERMINATION SPEC 1 ITEM NO. | TO NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 323 | 4 | | E5 | 25 | N | | | E38 | 25 | N | | |
| A 324 | 4 | | E6 | 25 | N | | | E38 | 25 | N | | |
| A 325 | 4 | | E7 | 25 | N | | | E38 | 25 | N | | |
| A 326 | 4 | | E8 | 25 | N | | | E39 | 25 | N | 14 13 | |
| A 327 | 4 | | E9 | 25 | N | | | E39 | 25 | N | | |
| A 328 | 4 | | E10 | 25 | N | | | E39 | 25 | N | | |
| A 329 | 4 | | E11 | 25 | N | | | E39 | 25 | N | | |
| A 330 | 4 | | E12 | 25 | N | | | E39 | 25 | N | | |
| A 331 | 4 | | E13 | 25 | N | | | E40 | 25 | N | 20 12 | |
| A 332 | 4 | | E14 | 25 | N | | | E40 | 25 | N | | |
| A 333 | 4 | | E15 | 25 | N | | | E40 | 25 | N | | |
| A 334 | 4 | | E16 | 25 | N | | | E40 | 25 | N | | |
| A 335 | 4 | | E17 | 25 | N | | | E41 | 25 | N | 20 12 | |
| A 336 | 4 | | E18 | 25 | N | | | E41 | 25 | N | | |
| A 337 | 4 | | E19 | 25 | N | | | E41 | 25 | N | | |
| A 338 | 4 | | E20 | 25 | N | | | E41 | 25 | N | | |
| A 339 | 4 | | E21 | 25 | N | | | E42 | 25 | N | 14 13 | |
| A 340 | 4 | | E22 | 25 | N | | | E42 | 25 | N | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | FROM CIRCUIT POINT | 2 | T/IN | FROM TERMINATION SPEC. 1 ITEM NO. | FROM NO. | TO CIRCUIT POINT | 2 | T/IN | TO TERMINATION SPEC 1 ITEM NO. | TO NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 341 | 4 | | E23 | 25 | N | | | E42 | 25 | N | | |
| A 342 | 4 | | E24 | 25 | N | | | E42 | 25 | N | | |
| A 343 | 4 | | E25 | 25 | N | | | E42 | 25 | N | | |
| A 344 | 4 | | E26 | 25 | N | | | E43 | 25 | N | 14 13 | |
| A 345 | 4 | | E27 | 25 | N | | | E43 | 25 | N | | |
| A 346 | 4 | | E28 | 25 | N | | | E43 | 25 | N | | |
| A 347 | 4 | | E29 | 25 | N | | | E43 | 25 | N | | |
| A 348 | 4 | | E30 | 25 | N | | | E43 | 25 | N | | |
| A 349 | 4 | | E31 | 25 | N | | 45 | E44 | 25 | N | 20 12 | 52 |
| A 350 | 4 | | E32 | 25 | N | | 44 | E44 | 25 | N | | 52 |
| A 351 | 4 | | E33 | 25 | N | | 43 | E44 | 25 | N | | 52 |
| A 352 | 4 | | E34 | 25 | N | | 42 | E44 | 25 | N | | 52 |
| A 353 | 4 | | P10-10 | 19 | N | 18 | 7 | E48 | 25 | N | | |
| A 354 | 4 | | E38 | 25 | N | | | E50 | 25 | N | 14 13 | |
| A 355 | 4 | | E39 | 25 | N | | | E50 | 25 | N | | |
| A 356 | 4 | | E40 | 25 | N | | | E50 | 25 | N | | |
| A 357 | 4 | | E41 | 25 | N | | | E50 | 25 | N | | |
| A 358 | 4 | | E42 | 25 | N | | | E50 | 25 | N | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

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| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | FROM CIRCUIT POINT | 2 | T/IN | FROM TERMINATION SPEC. 1 ITEM NO. | FROM NO. | TO CIRCUIT POINT | 2 | T/IN | TO TERMINATION SPEC 1 ITEM NO. | TO NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 305R | | | S8-11A | 25 | Y | | 22 | T1- 1 | 25 | Y | 21 | 20 |
| A 306 | 3 | | XDS1-A | 25 | Y | | 25 | XDS1-B | 25 | Y | | 25 |
| A 307 | 3 | | XDS1-C | 25 | Y | | 25 | XDS1-D | 25 | Y | | 25 |
| A 308 | 3 | | XDS2-A | 25 | Y | | 27 | XDS2-B | 25 | Y | | 27 |
| A 309 | 3 | | XDS2-C | 25 | Y | | 27 | XDS2-D | 25 | Y | | 27 |
| A 310 | 3 | | XDS3-A | 25 | Y | | 29 | XDS3-B | 25 | Y | | 29 |
| A 311 | 3 | | XDS3-C | 25 | Y | | 29 | XDS3-D | 25 | Y | | 29 |
| A 312 | 3 | | XDS4-A | 25 | Y | | 34 | XDS4-B | 25 | Y | | 34 |
| A 313 | 3 | | XDS4-C | 25 | Y | | 34 | XDS4-D | 25 | Y | | 34 |
| A 314 | 3 | | XDS5-A | 25 | Y | | 32 | XDS5-B | 25 | Y | | 32 |
| A 315 | 3 | | XDS5-C | 25 | Y | | 32 | XDS5-D | 25 | Y | | 32 |
| A 316 | 3 | | XDS6-A | 25 | Y | | 30 | XDS6-B | 25 | Y | | 30 |
| A 317 | 3 | | XDS6-C | 25 | Y | | 30 | XDS6-D | 25 | Y | | 30 |
| A 318 | 4 | | E1 | 25 | Y | | | G2- 6 | 25 | Y | | 41 |
| A 319 | 4 | | G2- 6 | 25 | Y | | 41 | G1- 6 | 25 | Y | | 36 |
| A 320 | 4 | | E2 | 25 | N | | | E38 | 25 | N | 14 13 | |
| A 321 | 4 | | E3 | 25 | N | | | E38 | 25 | N | | |
| A 322 | 4 | | E4 | 25 | N | | | E38 | 25 | N | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | FROM CIRCUIT POINT | 2 | T/IN | FROM TERMINATION SPEC. 1 ITEM NO. | FROM NO. | TO CIRCUIT POINT | 2 | T/IN | TO TERMINATION SPEC 1 ITEM NO. | TO NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 359 | 4 | | E43 | 25 | N | | | E50 | 25 | N | | |
| A 360 | 4 | | E44 | 25 | N | | 52 | E49 | 25 | N | 20 12 | 43 |
| A 361 | 4 | | E45 | 25 | N | | 48 | E49 | 25 | N | | 43 |
| A 362 | 4 | | E46 | 25 | N | | 48 | E49 | 25 | N | | 43 |
| A 363 | 4 | | E47 | 25 | N | | 48 | E49 | 25 | N | | 43 |
| A 364 | 4 | | E48 | 25 | N | | | E51 | 25 | N | | |
| A 365 | 4 | | E49 | 25 | N | | 43 | E51 | 25 | N | | |
| A 366 | 4 | | E50 | 25 | N | | | E51 | 25 | N | | |
| A 367 | 4 | | P1-34 | 19 | N | 18 | 46 | E52 | 25 | N | 14 13 | 43 |
| A 368 | 4 | | P2-34 | 19 | N | | 47 | E52 | 25 | N | | 43 |
| A 369 | 4 | | P3-34 | 19 | N | | 49 | E52 | 25 | N | | 43 |
| A 370 | 4 | | P5-34 | 19 | N | | 37 | E52 | 25 | N | | 43 |
| A 371 | 4 | | P6-34 | 19 | N | | 38 | E52 | 25 | N | | 43 |
| A 372 | 4 | | P7-34 | 19 | N | | 39 | E52 | 25 | N | | 43 |
| A 373 | 4 | | P8-34 | 19 | N | | 40 | E52 | 25 | N | | 43 |
| A 374 | 4 | | P4-34 | 19 | N | | 50 | E53 | 25 | N | 14 13 | 43 |
| A 375 | 4 | | S1SW1-C | 25 | Y | | 24 | E53 | 25 | N | | 43 |
| A 376 | 4 | | S2SW1-C | 25 | Y | | 26 | E53 | 25 | N | | 43 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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INCHES
0 1 2
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| CONDUCTOR | | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH | | | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET | | | TERMINATION SPEC. ▷1 | | CUT WIRE OR SHIELD / STRIP WIRE OR JACKET | | | TERMINATION SPEC ▷1 | |
| NUMBER | ITEM NO. | ▷2 | CIRCUIT POINT | ▷2 | T I N | ITEM NO. | NO. | CIRCUIT POINT | ▷2 | T I N | ITEM NO. | NO. |
| A 377 | 4 | | S3SW3-C | 25 | Y | | 28 | E53 | 25 | N | | 43 |
| A 378 | 4 | | S4SW1-C | 25 | Y | | 35 | E53 | 25 | N | | 43 |
| A 379 | 4 | | S5SW1-C | 25 | Y | | 33 | E53 | 25 | N | | 43 |
| A 380 | 4 | | S6SW3-C | 25 | Y | | 31 | E53 | 25 | N | | 43 |
| A 381 | 4 | | P10-66 | 19 | N | 18 | 7 | E54 | 25 | N | 20 12 | 43 |
| A 382 | 4 | | E52 | 25 | N | | 43 | E54 | 25 | N | | 43 |
| A 383 | 4 | | E53 | 25 | N | | 43 | E54 | 25 | N | | 43 |
| A 384 | 4 | | XF1 | 25 | Y | | 51 | E54 | 25 | N | | 43 |
| A 385 | 4 | | P10-65 | 19 | N | 18 | 7 | E55 | 25 | N | | 43 |
| A 386 | 4 | | XDS1-G | 25 | Y | | 25 | E55 | 25 | N | | 43 |
| A 387 | 4 | | XDS2-G | 25 | Y | | 27 | E55 | 25 | N | | 43 |
| A 388 | 4 | | XDS3-G | 25 | Y | | 29 | E55 | 25 | N | | 43 |
| A 389 | 4 | | XDS4-G | 25 | Y | | 34 | E55 | 25 | N | | 43 |
| A 390 | 4 | | XDS5-G | 25 | Y | | 32 | E55 | 25 | N | | 43 |
| A 391 | 4 | | XDS6-G | 25 | Y | | 30 | E55 | 25 | N | | 43 |
| A 392 | 3 | | J12-E | 19 | N | 18 | 19 | J12-F | 19 | N | 18 | 19 |

1. THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2. DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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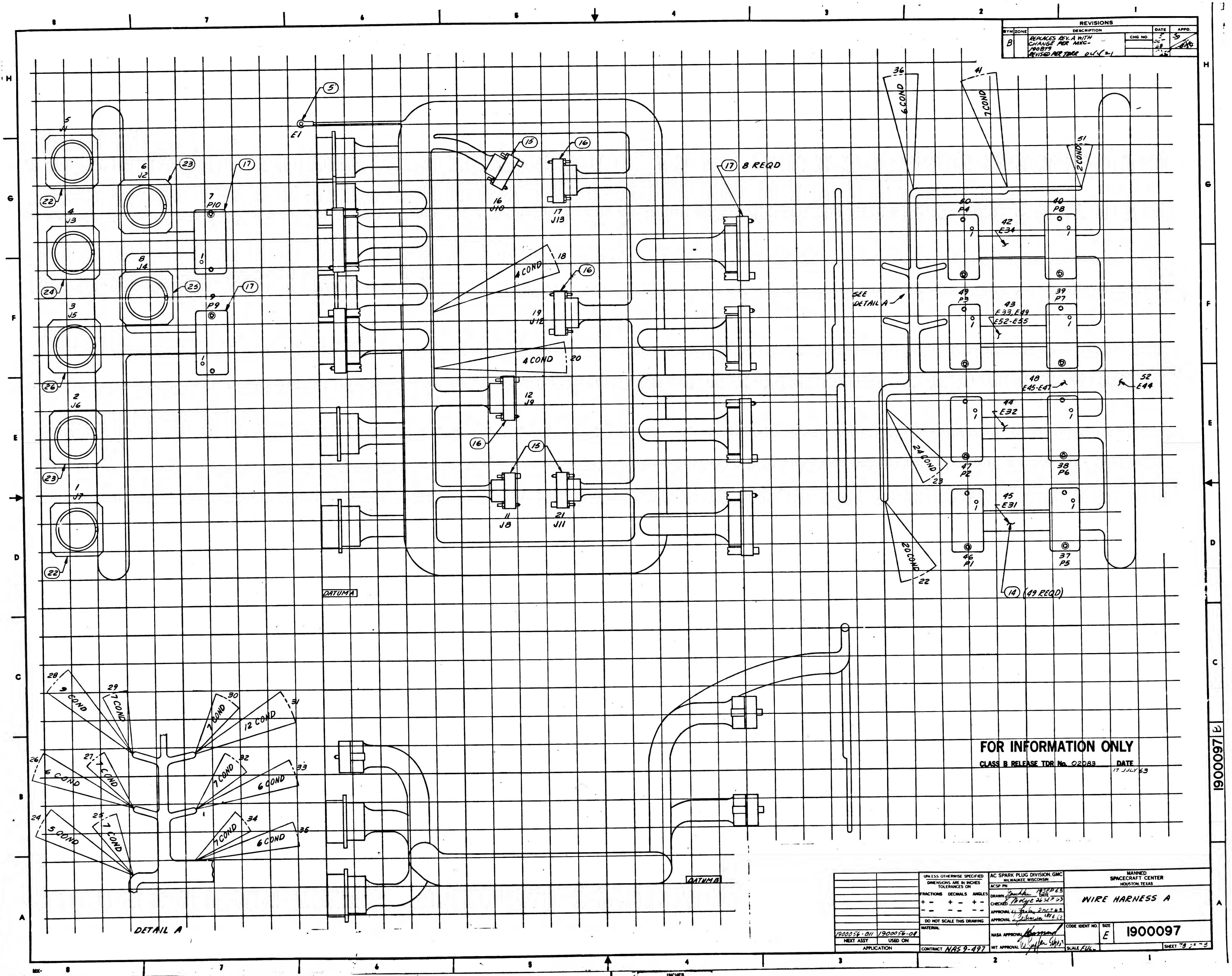
0 1 2
PHOTOGRAPHIC SCALE ONLY



| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
| B | | REPLACES REV. A WITH CHANGE PER MXC-190879<br>REVISED PER TDRR 04421 | | [illegible] | [illegible] |

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 02083 DATE 17 JULY 63

| | |
|---|---|
| 1900056-011 | 1900056-011 |
| NEXT ASSY | USED ON |
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
+ − + − + −
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Jaschke 19 SEP 63
CHECKED Wolye 26 SEP 63
APPROVAL Fowler 2 OCT 63
APPROVAL Jedman NOV 4 63
NASA APPROVAL
MIT APPROVAL Kupfer 5 NOV 63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRE HARNESS A

CODE IDENT NO. SIZE E 1900097
SCALE FULL SHEET [illegible]

1900097 B

INCHES
PHOTOGRAPHIC SCALE ONLY

| APPLICATION | |
|---|---|
| NEXT ASSY | USED ON |
| 1900056-011 | 1900056-011 |

REVISIONS

| SYM | DESCRIPTION | DATE | APPROVAL |
|---|---|---|---|
| B | REPLACES REV. A WITH CHANGE PER MXC-190879<br>REVISED PER TDR 01421 | 15 OCT 63<br>5 NOV 63 | |
| C | CHANGE IN ACCORDANCE WITH MXC192238 | 11 DEC 63 | A.N. |
| D | CHANGE IN ACCORDANCE WITH CM J92668 | 15 JAN 64 | J J J |
| E | CHANGE IN ACCORDANCE WITH CM 192961 | 16 JAN 64 | J.J.J. |
| F | CHANGE IN ACCORDANCE WITH CM 193268 TDRR 0956 | 5 MAR 64 | RR MEM |
| G | CHANGE IN ACCORDANCE WITH CM 195242 TDRR<br>REVISED PER TDR 09566 | 23 MAR 64 | RJF RR |

**FOR INFORMATION ONLY**

**CLASS B RELEASE TDR No.** 02083 **DATE** 7/31/63

Ⓑ REPLACES REV A WITH CHANGE

| REV | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B | B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SHEET | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 |

| REV STATUS OF SHEETS | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| REV | | | | | H | H | H | B | B | B | C | E | E | B | B | C | D | B | B | B | B | B | B |
| SHEET | | | | | 1 | 1A | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

ACSP PN

DRAWN Jacobs DATE 13 SEP 63
CHECKED Molye 2 Oct 63
APPROVAL 2 OCT 63
APPROVAL C. Geldman Nov 4 1963
NASA APPROVAL
MIT APPROVAL
CONTRACT NAS 9-497

WIRE HARNESS A

| CODE IDENT NO. | SIZE | | REV |
|---|---|---|---|
| | | 1900097 | H |
| SCALE FULL | | SHEET 1 OF 78 | |

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REVISIONS

| SYM | DESCRIPTION | DATE | APPROVAL |
|---|---|---|---|
| H | CHANGE IN ACCORDANCE WITH CM 196591 PER TDR 09567 | 15 MAY 64 | WCK J.E.G. |

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

REVISION H

NASA DRAWING NO.
1900097
SHEET 1A OF 78

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REVISION STATUS OF SHEETS

| SH | REV | SH | REV | SH | REV | SH | REV | SH | REV | SH | REV | SH | REV | SH | REV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 45 | B | | | | | | | | | | | | | | |
| 46 | B | | | | | | | | | | | | | | |
| 47 | B | | | | | | | | | | | | | | |
| 48 | B | | | | | | | | | | | | | | |
| 49 | B | | | | | | | | | | | | | | |
| 50 | B | | | | | | | | | | | | | | |
| 51 | B | | | | | | | | | | | | | | |
| 52 | B | | | | | | | | | | | | | | |
| 53 | B | | | | | | | | | | | | | | |
| 54 | B | | | | | | | | | | | | | | |
| 55 | B | | | | | | | | | | | | | | |
| 56 | B | | | | | | | | | | | | | | |
| 57 | B | | | | | | | | | | | | | | |
| 58 | E | | | | | | | | | | | | | | |
| 59 | E | | | | | | | | | | | | | | |
| 60 | E | | | | | | | | | | | | | | |
| 61 | B | | | | | | | | | | | | | | |
| 62 | E | | | | | | | | | | | | | | |
| 63 | B | | | | | | | | | | | | | | |
| 64 | B | | | | | | | | | | | | | | |
| 65 | B | | | | | | | | | | | | | | |
| 66 | B | | | | | | | | | | | | | | |
| 67 | B | | | | | | | | | | | | | | |
| 68 | B | | | | | | | | | | | | | | |
| 69 | B | | | | | | | | | | | | | | |
| 70 | D | | | | | | | | | | | | | | |
| 71 | E | | | | | | | | | | | | | | |
| 72 | C | | | | | | | | | | | | | | |
| 73 | G | | | | | | | | | | | | | | |
| 74 | B | | | | | | | | | | | | | | |
| 75 | B | | | | | | | | | | | | | | |
| 76 | B | | | | | | | | | | | | | | |
| 77 | G | | | | | | | | | | | | | | |
| 78 | H | | | | | | | | | | | | | | |

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REVISION H

NASA DRAWING NO.
1900097
SHEET 2 OF 78

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GCF WIRE HARNESS A B 1900097

PENNANT NOTE — GENERAL NOTES

1 SEE CONDUCTOR CHART

2 SEE CONDUCTOR CHART

3 INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327.

4 MARK CONDUCTOR IDENTIFICATION PER ND1002019.

5 MARK CONDUCTOR IDENTIFICATION ON SINGLE CONDUCTORS PER ND1002019 OMITTING ALL SUFFIX LETTERS EXCEPT A AND B.

6 SPACING OF CONDUCTOR IDENTIFICATION SHALL BE EVERY 1.2 INCHES.

7 SPIRALLING OF THE MARKING IS ALLOWED.

8 MARK SLEEVING WITH REFERENCE DESIGNATION AS SHOWN .12 INCH HIGH. COLOR BLACK PER ND1002019.

9 MARK SLEEVING OF MULTI-CONDUCTORS WITH THE CONDUCTOR NUMBER .12 INCH HIGH, COLOR BLACK. PER ND1002019 WHEN SLEEVING ITEM NUMBERS FOLLOW AN A OR T IN THE ACCESSORIES ITEM NUMBER FIELD.

10 A OR T PREFIX IN THE ACCESSORIES ITEM NUMBER COLUMN INDICATES THE READING POSITION AWAY FROM TERMINATION OR TOWARD TERMINATION RESPECTIVELY. OF THE WIRE MARKER SLEEVE.

11 LACE HARNESS USING ITEM 29.

12 IDENTIFY USING DRAWING NO. AND REVISION LETTER PER MIL-STD-130 (ES-267).

13 SOLDER PER MIL-STD-440 USING ITEMS 27 AND 28.

14 Y OR N IN TINNED COLUMN INDICATES YES OR NO.

| MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900097 | |
|---|---|---|---|
| SCALE-NONE | REV LTR | B | SHEET 3 OF 78 |

MIL 2084 4-63

GCF WIRE HARNESS A B 1900097

PENNANT GENERAL NOTES

NOTE

15 A LETTER WITH AN ASTERISK SUFFIX. INDICATES A LOWER CASE LETTER.

16 GRID MODULE IS 1 INCH.

17 UNLESS OTHERWISE SPECIFIED ---
FEATURE CENTERLINES ARE LOCATED WITHIN + OR - .25 INCH.
END OF HOOKUP WIRES OR ACCESSORIES ARE LOCATED WITHIN + OR - .12 INCH.

18 VENDOR ITEM - SEE SPECIFICATION CONTROL DRAWING.

19 FASTEN MARKER SECURELY WITH ITEM 29 . WRAP MARKER TO CONFORM TO CABLE CONFIGURATION.

20 THE SUFFIX LETTER OF A CONDUCTOR IDENTIFICATION NUMBER INDICATES CONDUCTOR SHIELDING, COLOR, OR MARKING.
A - FROM END SHIELD
B - TO END SHIELD
L - WHITE WITH BLUE TRACER
R - WHITE WITH RED TRACER

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1900097
SCALE-NONE REV LTR B SHEET 4 OF 78

MIL 2084 4 63

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GCF WIRE HARNESS A B 1900097

PENNANT GENERAL NOTES

NOTE

TOLERANCE CHART. UNLESS OTHERWISE SPECIFIED ---

| APPLICABLE LENGTH FOR WIRE OR CABLE, STRIP WIRE, STRIP JACKET, CUT WIRE OR CUT SHIELD. | TOLERANCE | | | | |
|---|---|---|---|---|---|
| | WIRE OR CABLE | STRIP | | CUT | |
| | | WIRE | JACKET | WIRE | SHIELD |
| UNDER 1 INCH | + .06-.00 | +.03-.00 | +.06-.06 | +.06-.06 | +.06-.06 |
| 1 INCH TO 6 INCHES | + .50-.00 | +.06-.00 | +.25-.25 | +.25-.25 | +.25-.25 |
| 6 INCHES TO 6 FEET | +1.00-.00 | | +.50-.50 | +.50-.50 | +.50-.50 |
| OVER 6 FEET | +2.00-.00 | | | | |

MANNED SPACECRAFT CENTER
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1900097
SCALE-NONE REV LTR B SHEET 5 OF 78

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GCF WIRE HARNESS A C 1900097

LIST OF MATERIALS

| PENNANT NOTE | ITEM | QTY | PART NO | DESCRIPTION |
|---|---|---|---|---|
| | 1 | 1 | 1900097-001 | WIRE ND1002181 CLASS 4 TYPE 2 24AWG (WHITE/RED, WHITE/BLUE) 527 FT TOTAL LENGTH |
| | 2 | 1 | 1900097-002 | WIRE ND1002181 CLASS 4 TYPE 1 24AWG (WHITE) 21 FT TOTAL LENGTH |
| | 3 | 1 | 1900097-003 | WIRE ND1002181 CLASS 1 TYPE 1 24AWG (WHITE) 146 FT TOTAL LENGTH |
| | 4 | 1 | 1900097-004 | WIRE ND1002181 CLASS 1 TYPE 1 22AWG (WHITE) 110 FT TOTAL LENGTH |
| 18 | 5 | 1 | 1015902- 46 | TERMINAL LUG |
| 18 | 6 | 6 | 1000243-003 | FERRULE, ELECTRICAL CONDUCTOR (INNER) |
| 18 | 7 | 6 | 1000242-004 | FERRULE, ELECTRICAL CONDUCTOR (OUTER) |
| 18 | 8 | 213 | 1000243-006 | FERRULE, ELECTRICAL CONDUCTOR (INNER) |
| 18 | 9 | 213 | 1000242-005 | FERRULE, ELECTRICAL CONDUCTOR (OUTER) |
| | 10 | 213 | 1010490-196 | INSULATION SLEEVE, ELECTRICAL (HEAT SHRINK) |
| | 11 | 219 | 1010490-198 | INSULATION SLEEVE, ELECTRICAL (HEAT SHRINK) |
| | 12 | 11 | 1010490-200 | INSULATION SLEEVE, ELECTRICAL (HEAT SHRINK) |
| | 13 | 49 | 1010490-258 | INSULATION SLEEVE, ELECTRICAL (HEAT SHRINK) |
| | 14 | 49 | 1016006-002 | SPLICE REDUCER, ELEC COND, CRIMP STYLE, COPPER |
| 18 | 15 | 3 | 1015867-140 | CONNECTOR RECEP ELEC |
| 18 | 16 | 3 | 1015867-200 | CONNECTOR RECEP ELEC |

MANNED SPACECRAFT CENTER
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SCALE-NONE REV LTR C SHEET 6 OF 78

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GCF WIRE HARNESS A E 1900097

LIST OF MATERIALS

| PENNANT NOTE | ITEM | QTY | PART NO | DESCRIPTION |
|---|---|---|---|---|
| 18 | 17 | 10 | 1015818-660 | CONNECTOR PLUG ELEC |
| 18 | 18 | 459 | 1015818-424 | CONNECTOR SOCKET CONTACTS |
| 18 | 19 | 26 | 1015818-420 | CONNECTOR SOCKET CONTACTS |
| | 20 | 5 | 1016006-001 | SPLICE REDUCER, ELEC COND, CRIMP STYLE, COPPER |
| 18 | 21 | 38 | 1015864-109 | INSULATION SLEEVE, ELECTRICAL |
| | 22 | 2 | MS3127E-24-61PX | CONNECTOR RECEP ELEC |
| | 23 | 2 | MS3127E-24-61P | CONNECTOR RECEP ELEC |
| | 24 | 1 | MS3127E-24-61PY | CONNECTOR RECEP ELEC |
| | 25 | 1 | MS3127E-24-61PW | CONNECTOR RECEP ELEC |
| | 26 | 1 | MS3127E-24-61PZ | CONNECTOR RECEP ELEC |
| | 27 | AR | QQ-S-571 | SOLDER SN60 (ES-2175 ALLOY 1) |
| | 28 | AR | QQ-S-571 | FLUX TYPE AR (ES-2175 TYPE 1 OR 2) OR MIL-F-14256 FLUX (ES-2798) |
| | 29 | AR | MIL-T-713 | LACING TAPE, TYPE P, CLASS 2, BLACK (ES-2732, NO. 18) |
| | 30 | 1 | 1016128-001 | BAND, IDENTIFICATION BLANK |

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SCALE-NONE REV LTR E SHEET 7 OF 78

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GCF WIRE HARNESS A E 1900097

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | STRIP WIRE OR JACKET 2 | TIN | FROM TERMINATION SPEC. 1 ITEM NO. | NO. | TO CIRCUIT POINT | STRIP WIRE OR JACKET 2 | TIN | TO TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A 1 | 3 | J1-A | 19 | N | | 5 | E1 | 25 | N | 5 | |
| A 2 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 2A | 4 | SHLD A2 | 25 | N | | | E2 | 25 | N | 14 13 | |
| A 2L | | J9-N | 19 | N | 19 | 5 | J8-J | 19 | N | 19 | 11 |
| A 2R | | J9-M | 19 | N | 19 | 5 | J8-H | 19 | N | 19 | 11 |
| A 3 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 3A | 4 | SHLD A3 | 25 | N | | | E2 | 25 | N | | |
| A 3L | | J12-N | 19 | N | 19 | 5 | J11-J | 19 | N | 19 | 21 |
| A 3R | | J12-M | 19 | N | 19 | 5 | J11-H | 19 | N | 19 | 21 |
| A 4 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 4A | 4 | SHLD A4 | 25 | N | | | E2 | 25 | N | | |
| A 4L | | J1-F | 19 | N | | 5 | J10-J | 19 | N | 18 | 16 |
| A 4R | | J1-G | 19 | N | | 5 | J10-H | 19 | N | 18 | 16 |
| A 5 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A 1900097
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MIL 2085 · 4-63 WIR

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | STRIP WIRE OR JACKET 2 | TIN | FROM TERMINATION SPEC. 1 ITEM NO. | NO. | TO CIRCUIT POINT | STRIP WIRE OR JACKET 2 | TIN | TO TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A 5A | 4 | SHLD A5 | 25 | N | | | E2 | 25 | N | | |
| A 5L | | J1-J | 19 | N | | 5 | S7- 2B | 25 | Y | | 23 |
| A 5R | | J1-H | 19 | N | | 5 | S7- 2A | 25 | Y | | 23 |
| A 6 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 6A | 4 | SHLD A6 | 25 | N | | | E2 | 25 | N | | |
| A 6L | | J1-L | 19 | N | | 5 | J8-R | 19 | N | 18 | 11 |
| A 6R | | J1-K | 19 | N | | 5 | J8-P | 19 | N | 18 | 11 |
| A 7 | 3 | J1-P | 19 | N | | 5 | P10-54 | 19 | N | 18 | 7 |
| A 8 | 3 | J1-R | 19 | N | | 5 | P10-43 | 19 | N | 18 | 7 |
| A 9 | 3 | J1-S | 19 | N | | 5 | P10-32 | 19 | N | 18 | 7 |
| A 10 | 3 | J1-T | 19 | N | | 5 | P10-21 | 19 | N | 18 | 7 |
| A 11 | 3 | J1-U | 19 | N | | 5 | P9-44 | 19 | N | 18 | 9 |
| A 12 | 3 | J1-V | 19 | N | | 5 | P9-33 | 19 | N | 18 | 9 |
| A 13 | 3 | J1-W | 19 | N | | 5 | P9-22 | 19 | N | 18 | 9 |
| A 14 | 3 | J1-X | 19 | N | | 5 | P9-11 | 19 | N | 18 | 9 |
| A 15 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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SIZE A 1900097
SCALE - NONE REV LTR B SHEET 9 OF 78

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | STRIP WIRE OR JACKET 2 | TIN | FROM TERMINATION SPEC. 1 ITEM NO. | NO. | TO CIRCUIT POINT | STRIP WIRE OR JACKET 2 | TIN | TO TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A 15A | 4 | SHLD A15 | 25 | N | | | E2 | 25 | N | | |
| A 15L | | J1-C* | 19 | N | | 5 | S7- 6B | 25 | Y | | 23 |
| A 15R | | J1-B* | 19 | N | | 5 | S7- 6A | 25 | Y | | 23 |
| A 16 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 16A | 4 | SHLD A16 | 25 | N | | | E2 | 25 | N | | |
| A 16L | | J1-E* | 19 | N | | 5 | J11-R | 19 | N | 18 | 21 |
| A 16R | | J1-D* | 19 | N | | 5 | J11-P | 19 | N | 18 | 21 |
| A 17 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 17A | 4 | SHLD A17 | 25 | N | | | E3 | 25 | N | 14 13 | |
| A 17L | | J1-G* | 19 | N | | 5 | S7- 3B | 25 | Y | | 23 |
| A 17R | | J1-F* | 19 | N | | 5 | S7- 3A | 25 | Y | | 23 |
| A 18 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 18A | 4 | SHLD A18 | 25 | N | | | E3 | 25 | N | | |
| A 18L | | J1-J* | 19 | N | | 5 | S7- 4B | 25 | Y | | 23 |
| A 18R | | J1-H* | 19 | N | | 5 | S7- 4A | 25 | Y | | 23 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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SIZE A 1900097
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MIL 2085 · 4-63 WIR

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GCF WIRE HARNESS A C 1900097

| CONDUCTOR NUMBER | ITEM NO. | FROM CIRCUIT POINT | STRIP WIRE OR JACKET 2 | TIN | FROM TERMINATION SPEC. 1 ITEM NO. | NO. | TO CIRCUIT POINT | STRIP WIRE OR JACKET 2 | TIN | TO TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A 19 | 3 | J1-M* | 19 | N | | 5 | S1SW1-NO | 25 | Y | | 24 |
| A 20 | 3 | J1-N* | 19 | N | | 5 | S2SW1-NO | 25 | Y | | 26 |
| A 21 | 3 | J1-P* | 19 | N | | 5 | S4SW1-NO | 25 | Y | | 35 |
| A 22 | 4 | J1-Q* | 19 | N | | 5 | E51 | 25 | N | | 43 |
| A 23 | 3 | J1-R* | 19 | N | | 5 | S5SW1-NO | 25 | Y | | 33 |
| A 24 | 4 | J1-S* | 19 | N | | 5 | XF1- 2 | 25 | Y | | 51 |
| A 25 | 4 | J1-T* | 19 | N | | 5 | E55 | 25 | N | 14 13 | 43 |
| A 26 | 3 | J1-U* | 19 | N | | 5 | P1-35 | 19 | N | 18 | 46 |
| A 27 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 27A | 4 | SHLD A27 | 25 | N | | | E3 | 25 | N | | |
| A 27L | | J1-X* | 19 | N | | 5 | S7- 5B | 25 | Y | | 23 |
| A 27R | | J1-W* | 19 | N | | 5 | S7- 5A | 25 | Y | | 23 |
| A 28 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 28A | 4 | SHLD A28 | 25 | N | | | E3 | 25 | N | | |
| A 28L | | J1-Z* | 19 | N | | 5 | T1- 5 | 25 | Y | 21 | 20 |
| A 28R | | J1-Y* | 19 | N | | 5 | T1- 4 | 25 | Y | 21 | 20 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A 1900097
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GCF WIRE HARNESS A D 1900097

| CONDUCTOR | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CUT WIRE OR SHIELD CIRCUIT POINT | STRIP WIRE OR JACKET | TIN | TERMINATION SPEC. ITEM NO. | NO. | CUT WIRE OR SHIELD CIRCUIT POINT | STRIP WIRE OR JACKET | TIN | TERMINATION SPEC ITEM NO. | NO. |
| A 29 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 29A | 4 | SHLD A29 | 25 | N | | | E3 | 25 | N | | |
| A 29L | | J1-BB | 19 | N | | 5 | T2- 5 | 25 | Y | 21 | 18 |
| A 29R | | J1-AA | 19 | N | | 5 | T2- 4 | 25 | Y | 21 | 18 |
| A 30 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 30A | 4 | SHLD A30 | 25 | N | | | E3 | 25 | N | | |
| A 30L | | J1-DD | 19 | N | | 5 | S7-10B | 25 | Y | | 23 |
| A 30R | | J1-EE | 19 | N | | 5 | S7-10A | 25 | Y | | 23 |
| A 31 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 31A | 4 | SHLD A31 | 25 | N | | | E3 | 25 | N | | |
| A 31L | | J1-FF | 19 | N | | 5 | S8-10B | 25 | Y | | 22 |
| A 31R | | J1-GG | 19 | N | | 5 | S8-10A | 25 | Y | | 22 |
| A 32 | 4 | J1-JJ | 19 | N | | 5 | E36 | 25 | N | 14 13 | |
| A 33 | 4 | J1-HH | 19 | N | | 5 | E35 | 25 | N | 14 13 | |
| A 34 | 4 | J1-KK | 19 | N | | 5 | E37 | 25 | N | 14 13 | |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
SIZE A
1900097
SCALE - NONE REV LTR D SHEET 12 OF 78

MIL 2085 · 4-63 WIR

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CUT WIRE OR SHIELD CIRCUIT POINT | STRIP WIRE OR JACKET | TIN | TERMINATION SPEC. ITEM NO. | NO. | CUT WIRE OR SHIELD CIRCUIT POINT | STRIP WIRE OR JACKET | TIN | TERMINATION SPEC ITEM NO. | NO. |
| A 35 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 35A | 4 | SHLD A35 | 25 | N | | | E4 | 25 | N | 14 13 | |
| A 35L | | J2-C | 19 | N | | 6 | P7-42 | 19 | N | 18 | 39 |
| A 35R | | J2-B | 19 | N | | 6 | P7-44 | 19 | N | 18 | 39 |
| A 36 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 36A | 4 | SHLD A36 | 25 | N | | | E4 | 25 | N | | |
| A 36L | | J2-E | 19 | N | | 6 | P7-41 | 19 | N | 18 | 39 |
| A 36R | | J2-D | 19 | N | | 6 | P7-45 | 19 | N | 18 | 39 |
| A 37 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 37A | 4 | SHLD A37 | 25 | N | | | E4 | 25 | N | | |
| A 37L | | J2-G | 19 | N | | 6 | P7-40 | 19 | N | 18 | 39 |
| A 37R | | J2-F | 19 | N | | 6 | P7-46 | 19 | N | 18 | 39 |
| A 38 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 38A | 4 | SHLD A38 | 25 | N | | | E4 | 25 | N | | |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CUT WIRE OR SHIELD CIRCUIT POINT | STRIP WIRE OR JACKET | TIN | TERMINATION SPEC. ITEM NO. | NO. | CUT WIRE OR SHIELD CIRCUIT POINT | STRIP WIRE OR JACKET | TIN | TERMINATION SPEC ITEM NO. | NO. |
| A 38L | | J2-J | 19 | N | | 6 | P7-39 | 19 | N | 18 | 39 |
| A 38R | | J2-H | 19 | N | | 6 | P7-47 | 19 | N | 18 | 39 |
| A 39 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 39A | 4 | SHLD A39 | 25 | N | | | E4 | 25 | N | | |
| A 39L | | J2-L | 19 | N | | 6 | P7-38 | 19 | N | 18 | 39 |
| A 39R | | J2-K | 19 | N | | 6 | P7-48 | 19 | N | 18 | 39 |
| A 40 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 40A | 4 | SHLD A40 | 25 | N | | | E4 | 25 | N | | |
| A 40L | | J2-N | 19 | N | | 6 | P8-42 | 19 | N | 18 | 40 |
| A 40R | | J2-M | 19 | N | | 6 | P8-44 | 19 | N | 18 | 40 |
| A 41 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 41A | 4 | SHLD A41 | 25 | N | | | E4 | 25 | N | | |
| A 41L | | J2-R | 19 | N | | 6 | P8-41 | 19 | N | 18 | 40 |
| A 41R | | J2-P | 19 | N | | 6 | P8-45 | 19 | N | 18 | 40 |
| A 42 | 1 | | | | 8 9 | | | | | | |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CUT WIRE OR SHIELD CIRCUIT POINT | STRIP WIRE OR JACKET | TIN | TERMINATION SPEC. ITEM NO. | NO. | CUT WIRE OR SHIELD CIRCUIT POINT | STRIP WIRE OR JACKET | TIN | TERMINATION SPEC ITEM NO. | NO. |
| | | | | | A 10 | | | | | A 11 | |
| A 42A | 4 | SHLD A42 | 25 | N | | | E5 | 25 | N | 14 13 | |
| A 42L | | J2-T | 19 | N | | 6 | P8-40 | 19 | N | 18 | 40 |
| A 42R | | J2-S | 19 | N | | 6 | P8-46 | 19 | N | 18 | 40 |
| A 43 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 43A | 4 | SHLD A43 | 25 | N | | | E5 | 25 | N | | |
| A 43L | | J2-V | 19 | N | | 6 | P8-39 | 19 | N | 18 | 40 |
| A 43R | | J2-U | 19 | N | | 6 | P8-47 | 19 | N | 18 | 40 |
| A 44 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 44A | 4 | SHLD A44 | 25 | N | | | E5 | 25 | N | | |
| A 44L | | J2-X | 19 | N | | 6 | P8-38 | 19 | N | 18 | 40 |
| A 44R | | J2-W | 19 | N | | 6 | P8-48 | 19 | N | 18 | 40 |
| A 45 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 45A | 4 | SHLD A45 | 25 | N | | | E5 | 25 | N | | |
| A 45L | | J2-C* | 19 | N | | 6 | P7-37 | 19 | N | 18 | 39 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR INDIVIDUAL LENGTH | | | FROM | | | | | | TO | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 45R | | | J2-B* | 19 | N | | | 6 | P7-49 | 19 | N | | 18 | 39 |
| A 46 | 1 | | | | | | 8 9 | | | | | | | |
| | | | | | | | A 10 | | | | | | A 11 | |
| A 46A | 4 | | SHLD A46 | 25 | N | | | | E5 | 25 | N | | | |
| A 46L | | | J2-E* | 19 | N | | | 6 | P7-36 | 19 | N | | 18 | 39 |
| A 46R | | | J2-D* | 19 | N | | | 6 | P7-50 | 19 | N | | 18 | 39 |
| A 47 | 1 | | | | | | 8 9 | | | | | | | |
| | | | | | | | A 10 | | | | | | A 11 | |
| A 47A | 4 | | SHLD A47 | 25 | N | | | | E5 | 25 | N | | | |
| A 47L | | | J2-G* | 19 | N | | | 6 | P7-29 | 19 | N | | 18 | 39 |
| A 47R | | | J2-F* | 19 | N | | | 6 | P7-14 | 19 | N | | 18 | 39 |
| A 48 | 1 | | | | | | 8 9 | | | | | | | |
| | | | | | | | A 10 | | | | | | A 11 | |
| A 48A | 4 | | SHLD A48 | 25 | N | | | | E5 | 25 | N | | | |
| A 48L | | | J2-J* | 19 | N | | | 6 | P9-27 | 19 | N | | 18 | 9 |
| A 48R | | | J2-H* | 19 | N | | | 6 | P9-28 | 19 | N | | 18 | 9 |
| A 49 | 1 | | | | | | 8 9 | | | | | | | |
| | | | | | | | A 10 | | | | | | A 11 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
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| CONDUCTOR INDIVIDUAL LENGTH | | | FROM | | | | | | TO | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 49A | 4 | | SHLD A49 | 25 | N | | | | E6 | 25 | N | | 14 13 | |
| A 49L | | | J2-N* | 19 | N | | | 6 | P8-37 | 19 | N | | 18 | 40 |
| A 49R | | | J2-M* | 19 | N | | | 6 | P8-49 | 19 | N | | 18 | 40 |
| A 50 | 1 | | | | | | 8 9 | | | | | | | |
| | | | | | | | A 10 | | | | | | A 11 | |
| A 50A | 4 | | SHLD A50 | 25 | N | | | | E6 | 25 | N | | | |
| A 50L | | | J2-R* | 19 | N | | | 6 | P8-36 | 19 | N | | 18 | 40 |
| A 50R | | | J2-P* | 19 | N | | | 6 | P8-50 | 19 | N | | 18 | 40 |
| A 51 | 1 | | | | | | 8 9 | | | | | | | |
| | | | | | | | A 10 | | | | | | A 11 | |
| A 51A | 4 | | SHLD A51 | 25 | N | | | | E6 | 25 | N | | | |
| A 51L | | | J2-T* | 19 | N | | | 6 | P8-29 | 19 | N | | 18 | 40 |
| A 51R | | | J2-S* | 19 | N | | | 6 | P8-14 | 19 | N | | 18 | 40 |
| A 52 | 1 | | | | | | 8 9 | | | | | | | |
| | | | | | | | A 10 | | | | | | A 11 | |
| A 52A | 4 | | SHLD A52 | 25 | N | | | | E6 | 25 | N | | | |
| A 52L | | | J2-V* | 19 | N | | | 6 | P9- 8 | 19 | N | | 18 | 9 |
| A 52R | | | J2-U* | 19 | N | | | 6 | P9- 9 | 19 | N | | 18 | 9 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
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| CONDUCTOR INDIVIDUAL LENGTH | | | FROM | | | | | | TO | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 53 | 1 | | | | | | 8 9 | | | | | | | |
| | | | | | | | A 10 | | | | | | A 11 | |
| A 53A | 4 | | SHLD A53 | 25 | N | | | | E6 | 25 | N | | | |
| A 53L | | | J2-X* | 19 | N | | | 6 | P7-30 | 19 | N | | 18 | 39 |
| A 53R | | | J2-W* | 19 | N | | | 6 | P7-13 | 19 | N | | 18 | 39 |
| A 54 | 1 | | | | | | 8 9 | | | | | | | |
| | | | | | | | A 10 | | | | | | A 11 | |
| A 54A | 4 | | SHLD A54 | 25 | N | | | | E6 | 25 | N | | | |
| A 54L | | | J2-Z* | 19 | N | | | 6 | P9-20 | 19 | N | | 18 | 9 |
| A 54R | | | J2-Y* | 19 | N | | | 6 | P9-21 | 19 | N | | 18 | 9 |
| A 55 | 1 | | | | | | 8 9 | | | | | | | |
| | | | | | | | A 10 | | | | | | A 11 | |
| A 55A | 4 | | SHLD A55 | 25 | N | | | | E7 | 25 | N | | 14 13 | |
| A 55L | | | J2-CC | 19 | N | | | 6 | P8-30 | 19 | N | | 18 | 40 |
| A 55R | | | J2-BB | 19 | N | | | 6 | P8-13 | 19 | N | | 18 | 40 |
| A 56 | 1 | | | | | | 8 9 | | | | | | | |
| | | | | | | | A 10 | | | | | | A 11 | |
| A 56A | 4 | | SHLD A56 | 25 | N | | | | E7 | 25 | N | | | |

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| CONDUCTOR INDIVIDUAL LENGTH | | | FROM | | | | | | TO | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | 2 | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 56L | | | J2-EE | 19 | N | | | 6 | P8-19 | 19 | N | | 18 | 40 |
| A 56R | | | J2-DD | 19 | N | | | 6 | P8-24 | 19 | N | | 18 | 40 |
| A 57 | 1 | | | | | | 8 9 | | | | | | | |
| | | | | | | | A 10 | | | | | | A 11 | |
| A 57A | 4 | | SHLD A57 | 25 | N | | | | E7 | 25 | N | | | |
| A 57L | | | J2-GG | 19 | N | | | 6 | P9-16 | 19 | N | | 18 | 9 |
| A 57R | | | J2-FF | 19 | N | | | 6 | P9-17 | 19 | N | | 18 | 9 |
| A 58 | 1 | | | | | | 8 9 | | | | | | | |
| | | | | | | | A 10 | | | | | | A 11 | |
| A 58A | 4 | | SHLD A58 | 25 | N | | | | E7 | 25 | N | | | |
| A 58L | | | J2-JJ | 19 | N | | | 6 | P7-19 | 19 | N | | 18 | 39 |
| A 58R | | | J2-HH | 19 | N | | | 6 | P7-24 | 19 | N | | 18 | 39 |
| A 59 | 1 | | | | | | 8 9 | | | | | | | |
| | | | | | | | A 10 | | | | | | A 11 | |
| A 59A | 4 | | SHLD A59 | 25 | N | | | | E7 | 25 | N | | | |
| A 59L | | | J2-LL | 19 | N | | | 6 | P7-20 | 19 | N | | 18 | 39 |
| A 59R | | | J2-KK | 19 | N | | | 6 | P7-23 | 19 | N | | 18 | 39 |
| A 60 | 1 | | | | | | 8 9 | | | | | | | |

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| CONDUCTOR | | | FROM | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
| | | | | | A 10 | | | | A 11 | |
| A 60A | 4 | | SHLD A60 | 25N | | | E7 | 25N | | |
| A 60L | | | J2-NN | 19N | | 6 | P8-20 | 19N | 18 | 40 |
| A 60R | | | J2-MM | 19N | | 6 | P8-23 | 19N | 18 | 40 |
| A 61 | 1 | | | | 8 9 | | | | | |
| | | | | | A 10 | | | | A 11 | |
| A 61A | 4 | | SHLD A61 | 25N | | | E8 | 25N | 14 13 | |
| A 61L | | | J3-C | 19N | | 4 | P4-58 | 19N | 18 | 50 |
| A 61R | | | J3-B | 19N | | 4 | P4-60 | 19N | 18 | 50 |
| A 62 | 1 | | | | 8 9 | | | | | |
| | | | | | A 10 | | | | A 11 | |
| A 62A | 4 | | SHLD A62 | 25N | | | E8 | 25N | | |
| A 62L | | | J3-E | 19N | | 4 | P4-57 | 19N | 18 | 50 |
| A 62R | | | J3-D | 19N | | 4 | P4-61 | 19N | 18 | 50 |
| A 63 | 1 | | | | 8 9 | | | | | |
| | | | | | A 10 | | | | A 11 | |
| A 63A | 4 | | SHLD A63 | 25N | | | E8 | 25N | | |
| A 63L | | | J3-G | 19N | | 4 | P4-56 | 19N | 18 | 50 |

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| CONDUCTOR | | | FROM | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 63R | | | J3-F | 19N | | 4 | P4-62 | 19N | 18 | 50 |
| A 64 | 1 | | | | 8 9 | | | | | |
| | | | | | A 10 | | | | A 11 | |
| A 64A | 4 | | SHLD A64 | 25N | | | E8 | 25N | | |
| A 64L | | | J3-J | 19N | | 4 | P4-55 | 19N | 18 | 50 |
| A 64R | | | J3-H | 19N | | 4 | P4-63 | 19N | 18 | 50 |
| A 65 | 1 | | | | 8 9 | | | | | |
| | | | | | A 10 | | | | A 11 | |
| A 65A | 4 | | SHLD A65 | 25N | | | E8 | 25N | | |
| A 65L | | | J3-L | 19N | | 4 | P4-54 | 19N | 18 | 50 |
| A 65R | | | J3-K | 19N | | 4 | P4-64 | 19N | 18 | 50 |
| A 66 | 1 | | | | 8 9 | | | | | |
| | | | | | A 10 | | | | A 11 | |
| A 66A | 4 | | SHLD A66 | 25N | | | E9 | 25N | 14 13 | |
| A 66L | | | J3-N | 19N | | 4 | P4-42 | 19N | 18 | 50 |
| A 66R | | | J3-M | 19N | | 4 | P4-44 | 19N | 18 | 50 |
| A 67 | 1 | | | | 8 9 | | | | | |
| | | | | | A 10 | | | | A 11 | |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR | | | FROM | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 67A | 4 | | SHLD A67 | 25N | | | E9 | 25N | | |
| A 67L | | | J3-R | 19N | | 4 | P4-41 | 19N | 18 | 50 |
| A 67R | | | J3-P | 19N | | 4 | P4-45 | 19N | 18 | 50 |
| A 68 | 1 | | | | 8 9 | | | | | |
| | | | | | A 10 | | | | A 11 | |
| A 68A | 4 | | SHLD A68 | 25N | | | E9 | 25N | | |
| A 68L | | | J3-T | 19N | | 4 | P4-40 | 19N | 18 | 50 |
| A 68R | | | J3-S | 19N | | 4 | P4-46 | 19N | 18 | 50 |
| A 69 | 1 | | | | 8 9 | | | | | |
| | | | | | A 10 | | | | A 11 | |
| A 69A | 4 | | SHLD A69 | 25N | | | E9 | 25N | | |
| A 69L | | | J3-V | 19N | | 4 | P4-39 | 19N | 18 | 50 |
| A 69R | | | J3-U | 19N | | 4 | P4-47 | 19N | 18 | 50 |
| A 70 | 1 | | | | 8 9 | | | | | |
| | | | | | A 10 | | | | A 11 | |
| A 70A | 4 | | SHLD A70 | 25N | | | E9 | 25N | | |
| A 70L | | | J3-X | 19N | | 4 | P4-38 | 19N | 18 | 50 |
| A 70R | | | J3-W | 19N | | 4 | P4-48 | 19N | 18 | 50 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR | | | FROM | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| INDIVIDUAL LENGTH NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 71 | 3 | | J3-Y | 19N | | 4 | P3-27 | 19N | 18 | 49 |
| A 72 | 3 | | J3-Z | 19N | | 4 | P3-33 | 19N | 18 | 49 |
| A 73 | 1 | | | | 8 9 | | | | | |
| | | | | | A 10 | | | | A 11 | |
| A 73A | 4 | | SHLD A73 | 25N | | 4 | E10 | 25N | 14 13 | |
| A 73L | | | J3-C* | 19N | | 4 | P4-53 | 19N | 18 | 50 |
| A 73R | | | J3-B* | 19N | | | P4-65 | 19N | 18 | 50 |
| A 74 | 1 | | | | 8 9 | | | | | |
| | | | | | A 10 | | | | A 11 | |
| A 74A | 4 | | SHLD A74 | 25N | | | E10 | 25N | | |
| A 74L | | | J3-E* | 19N | | 4 | P4-52 | 19N | 18 | 50 |
| A 74R | | | J3-D* | 19N | | 4 | P4-66 | 19N | 18 | 50 |
| A 75 | 1 | | | | 8 9 | | | | | |
| | | | | | A 10 | | | | A 11 | |
| A 75A | 4 | | SHLD A75 | 25N | | | E10 | 25N | | |
| A 75L | | | J3-G* | 19N | | 4 | P4-17 | 19N | 18 | 50 |
| A 75R | | | J3-F* | 19N | | 4 | P4- 6 | 19N | 18 | 50 |
| A 76 | 1 | | | | 8 9 | | | | | |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
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MIL 2085 - 4-63 WIR

GCF WIRE HARNESS A B 1900097

| CONDUCTOR INDIVIDUAL LENGTH | | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
| | | | | | | A 10 | | | | | A 11 | |
| A 76A | 4 | | SHLD A76 | 25 | N | | | E10 | 25 | N | | |
| A 76L | | | J3-J* | 19 | N | | 4 | P4-18 | 19 | N | 18 | 50 |
| A 76R | | | J3-H* | 19 | N | | 4 | P4- 5 | 19 | N | 18 | 50 |
| A 77 | 3 | | J3-I* | 19 | N | | 4 | P4-27 | 19 | N | 18 | 50 |
| A 78 | 3 | | J3-K* | 19 | N | | 4 | P4-33 | 19 | N | 18 | 50 |
| A 79 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 79A | 4 | | SHLD A79 | 25 | N | | | E10 | 25 | N | | |
| A 79L | | | J3-N* | 19 | N | | 4 | P4-37 | 19 | N | 18 | 50 |
| A 79R | | | J3-M* | 19 | N | | 4 | P4-49 | 19 | N | 18 | 50 |
| A 80 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 80A | 4 | | SHLD A80 | 25 | N | | | E11 | 25 | N | 14 13 | |
| A 80L | | | J3-R* | 19 | N | | 4 | P4-36 | 19 | N | 18 | 50 |
| A 80R | | | J3-P* | 19 | N | | 4 | P4-50 | 19 | N | 18 | 50 |
| A 81 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

| | | | |
|---|---|---|---|
| MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900097 | |
| SCALE - NONE | REV LTR B | | SHEET 24 OF 78 |

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR INDIVIDUAL LENGTH | | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 81A | 4 | | SHLD A81 | 25 | N | | | E11 | 25 | N | | |
| A 81L | | | J3-T* | 19 | N | | 4 | P4-29 | 19 | N | 18 | 50 |
| A 81R | | | J3-S* | 19 | N | | 4 | P4-14 | 19 | N | 18 | 50 |
| A 82 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 82A | 4 | | SHLD A82 | 25 | N | | | E11 | 25 | N | | |
| A 82L | | | J3-V* | 19 | N | | 4 | P10-30 | 19 | N | 18 | 7 |
| A 82R | | | J3-U* | 19 | N | | 4 | P10-31 | 19 | N | 18 | 7 |
| A 83 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 83A | 4 | | SHLD A83 | 25 | N | | | E11 | 25 | N | | |
| A 83L | | | J3-X* | 19 | N | | 4 | P4- 7 | 19 | N | 18 | 50 |
| A 83R | | | J3-W* | 19 | N | | 4 | P4- 4 | 19 | N | 18 | 50 |
| A 84 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 84A | 4 | | SHLD A84 | 25 | N | | | E11 | 25 | N | | |
| A 84L | | | J3-Z* | 19 | N | | 4 | P4- 8 | 19 | N | 18 | 50 |
| A 84R | | | J3-Y* | 19 | N | | 4 | P4- 3 | 19 | N | 18 | 50 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

| | | | |
|---|---|---|---|
| MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900097 | |
| SCALE - NONE | REV LTR B | | SHEET 25 OF 78 |

MIL 2085 · 4-63 WIR

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR INDIVIDUAL LENGTH | | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 85 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 85A | 4 | | SHLD A85 | 25 | N | | | E12 | 25 | N | 14 13 | |
| A 85L | | | J3-CC | 19 | N | | 4 | P4-30 | 19 | N | 18 | 50 |
| A 85R | | | J3-BB | 19 | N | | 4 | P4-13 | 19 | N | 18 | 50 |
| A 86 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 86A | 4 | | SHLD A86 | 25 | N | | | E12 | 25 | N | | |
| A 86L | | | J3-EE | 19 | N | | 4 | P4-19 | 19 | N | 18 | 50 |
| A 86R | | | J3-DD | 19 | N | | 4 | P4-24 | 19 | N | 18 | 50 |
| A 87 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 87A | 4 | | SHLD A87 | 25 | N | | | E12 | 25 | N | | |
| A 87L | | | J3-GG | 19 | N | | 4 | P10-26 | 19 | N | 18 | 7 |
| A 87R | | | J3-FF | 19 | N | | 4 | P10-27 | 19 | N | 18 | 7 |
| A 88 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 88A | 4 | | SHLD A88 | 25 | N | | | E12 | 25 | N | | |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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|---|---|---|---|
| MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900097 | |
| SCALE - NONE | REV LTR B | | SHEET 26 OF 78 |

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR INDIVIDUAL LENGTH | | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 88L | | | J3-JJ | 19 | N | | 4 | P4- 9 | 19 | N | 18 | 50 |
| A 88R | | | J3-HH | 19 | N | | 4 | P4- 2 | 19 | N | 18 | 50 |
| A 89 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 89A | 4 | | SHLD A89 | 25 | N | | | E12 | 25 | N | | |
| A 89L | | | J3-LL | 19 | N | | 4 | P4-10 | 19 | N | 18 | 50 |
| A 89R | | | J3-KK | 19 | N | | 4 | P4- 1 | 19 | N | 18 | 50 |
| A 90 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 90A | 4 | | SHLD A90 | 25 | N | | | E12 | 25 | N | | |
| A 90L | | | J3-NN | 19 | N | | 4 | P4-20 | 19 | N | 18 | 50 |
| A 90R | | | J3-MM | 19 | N | | 4 | P4-23 | 19 | N | 18 | 50 |
| A 91 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 91A | 4 | | SHLD A91 | 25 | N | | | E13 | 25 | N | 14 13 | |
| A 91L | | | J4-C | 19 | N | | 8 | P3-58 | 19 | N | 18 | 49 |
| A 91R | | | J4-B | 19 | N | | 8 | P3-60 | 19 | N | 18 | 49 |
| A 92 | 1 | | | | | 8 9 | | | | | | |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

| | | | |
|---|---|---|---|
| MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900097 | |
| SCALE - NONE | REV LTR B | | SHEET 27 OF 78 |

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR INDIVIDUAL LENGTH | | | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | FROM TERMINATION SPEC. 1> | | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | TO TERMINATION SPEC 1> | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2> | CIRCUIT POINT | 2> | TIN | ITEM NO. | NO. | CIRCUIT POINT | 2> | TIN | ITEM NO. | NO. |
| | | | | | | A 10 | | | | | A 11 | |
| A 92A | 4 | | SHLD A92 | 25 | N | | | E13 | 25 | N | | |
| A 92L | | | J4-E | | | | 8 | P3-57 | 19 | N | 18 | 49 |
| A 92R | | | J4-D | | | | 8 | P3-61 | 19 | N | 18 | 49 |
| A 93 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 93A | 4 | | SHLD A93 | 25 | N | | | E13 | 25 | N | | |
| A 93L | | | J4-G | 19 | N | | 8 | P3-56 | 19 | N | 18 | 49 |
| A 93R | | | J4-F | 19 | N | | 8 | P3-62 | 19 | N | 18 | 49 |
| A 94 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 94A | 4 | | SHLD A94 | 25 | N | | | E13 | 25 | N | | |
| A 94L | | | J4-J | 19 | N | | 8 | P3-55 | 19 | N | 18 | 49 |
| A 94R | | | J4-H | 19 | N | | 8 | P3-63 | 19 | N | 18 | 49 |
| A 95 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 95A | 4 | | SHLD A95 | 25 | N | | | E13 | 25 | N | | |
| A 95L | | | J4-L | 19 | N | | 8 | P3-54 | 19 | N | 18 | 49 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900097
SCALE - NONE | REV LTR B | SHEET 28 OF 78

MIL 2085 · 4-63 WIR

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR INDIVIDUAL LENGTH | | | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | FROM TERMINATION SPEC. 1> | | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | TO TERMINATION SPEC 1> | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2> | CIRCUIT POINT | 2> | TIN | ITEM NO. | NO. | CIRCUIT POINT | 2> | TIN | ITEM NO. | NO. |
| A 95R | | | J4-K | 19 | N | | 8 | P3-64 | 19 | N | 18 | 49 |
| A 96 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 96A | 4 | | SHLD A96 | 25 | N | | | E13 | 25 | N | | |
| A 96L | | | J4-N | 19 | N | | 8 | P3-42 | 19 | N | 18 | 49 |
| A 96R | | | J4-M | 19 | N | | 8 | P3-44 | 19 | N | 18 | 49 |
| A 97 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 97A | 4 | | SHLD A97 | 25 | N | | | E13 | 25 | N | | |
| A 97L | | | J4-R | | | | 8 | P3-41 | 19 | N | 18 | 49 |
| A 97R | | | J4-P | | | | 8 | P3-45 | 19 | N | 18 | 49 |
| A 98 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 98A | 4 | | SHLD A98 | 25 | N | | | E14 | 25 | N | 14 13 | |
| A 98L | | | J4-T | 19 | N | | 8 | P3-40 | 19 | N | 18 | 49 |
| A 98R | | | J4-S | 19 | N | | 8 | P3-46 | 19 | N | 18 | 49 |
| A 99 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900097
SCALE - NONE | REV LTR B | SHEET 29 OF 78

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR INDIVIDUAL LENGTH | | | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | FROM TERMINATION SPEC. 1> | | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | TO TERMINATION SPEC 1> | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2> | CIRCUIT POINT | 2> | TIN | ITEM NO. | NO. | CIRCUIT POINT | 2> | TIN | ITEM NO. | NO. |
| A 99A | 4 | | SHLD A99 | 25 | N | | | E14 | 25 | N | | |
| A 99L | | | J4-V | 19 | N | | 8 | P3-39 | 19 | N | 18 | 49 |
| A 99R | | | J4-U | 19 | N | | 8 | P3-47 | 19 | N | 18 | 49 |
| A 100 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 100A | 4 | | SHLD A100 | 25 | N | | | E14 | 25 | N | | |
| A 100L | | | J4-X | 19 | N | | 8 | P3-38 | 19 | N | 18 | 49 |
| A 100R | | | J4-W | 19 | N | | 8 | P3-48 | 19 | N | 18 | 49 |
| A 101 | 3 | | J4-Y | 19 | N | | 8 | P1-27 | 19 | N | 18 | 46 |
| A 102 | 3 | | J4-Z | 19 | N | | 8 | P1-33 | 19 | N | 18 | 46 |
| A 103 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 103A | 4 | | SHLD A104 | 25 | N | | | E14 | 25 | N | | |
| A 103L | | | J4-C* | 19 | N | | 8 | P3-53 | 19 | N | 18 | 49 |
| A 103R | | | J4-B* | 19 | N | | 8 | P3-65 | 19 | N | 18 | 49 |
| A 104 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 104A | 4 | | SHLD A104 | 25 | N | | | E14 | 25 | N | | |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900097
SCALE - NONE | REV LTR B | SHEET 30 OF 78

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR INDIVIDUAL LENGTH | | | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | FROM TERMINATION SPEC. 1> | | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | TO TERMINATION SPEC 1> | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2> | CIRCUIT POINT | 2> | TIN | ITEM NO. | NO. | CIRCUIT POINT | 2> | TIN | ITEM NO. | NO. |
| A 104L | | | J4-E* | 19 | N | | 8 | P3-52 | 19 | N | 18 | 49 |
| A 104R | | | J4-D* | 19 | N | | 8 | P3-66 | 19 | N | 18 | 49 |
| A 105 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 105A | 4 | | SHLD A105 | 25 | N | | | E14 | 25 | N | | |
| A 105L | | | J4-G* | 19 | N | | 8 | P3-17 | 19 | N | 18 | 49 |
| A 105R | | | J4-F* | 19 | N | | 8 | P3- 6 | 19 | N | 18 | 49 |
| A 106 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 106A | 4 | | SHLD A106 | 25 | N | | | E15 | 25 | N | 14 13 | |
| A 106L | | | J4-J* | 19 | N | | 8 | P3-18 | 19 | N | 18 | 49 |
| A 106R | | | J4-H* | 19 | N | | 8 | P3- 5 | 19 | N | 18 | 49 |
| A 107 | 3 | | J4-I* | 19 | N | | 8 | P2-27 | 19 | N | 18 | 47 |
| A 108 | 3 | | J4-K* | 19 | N | | 8 | P2-33 | 19 | N | 18 | 47 |
| A 109 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 109A | 4 | | SHLD A109 | 25 | N | | | E15 | 25 | N | | |
| A 109L | | | J4-N* | 19 | N | | 8 | P3-37 | 19 | N | 18 | 49 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900097
SCALE - NONE | REV LTR B | SHEET 31 OF 78

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | STRIP 2 TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | STRIP 2 TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 109R | | J4-M* | 19N | | 8 | P3-49 | 19N | 18 | 49 |
| A 110 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |
| A 110A | 4 | SHLD A110 | 25N | | | E15 | 25N | | |
| A 110L | | J4-R* | 19N | | 8 | P3-36 | 19N | 18 | 49 |
| A 110R | | J4-P* | 19N | | 8 | P3-50 | 19N | 18 | 49 |
| A 111 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |
| A 111A | 4 | SHLD A111 | 25N | | | E15 | 25N | | |
| A 111L | | J4-V* | 19N | | 8 | P10-41 | 19N | 18 | 7 |
| A 111R | | J4-U* | 19N | | 8 | P10-42 | 19N | 18 | 7 |
| A 112 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |
| A 112A | 4 | SHLD A112 | 25N | | | E15 | 25N | | |
| A 112L | | J4-X* | 19N | | 8 | P3- 7 | 19N | 18 | 49 |
| A 112R | | J4-W* | 19N | | 8 | P3- 4 | 19N | 18 | 49 |
| A 113 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900097

SCALE - NONE | REV LTR B | SHEET 32 OF 78

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | STRIP 2 TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | STRIP 2 TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 113A | 4 | SHLD A113 | 25N | | | E15 | 25N | | |
| A 113L | | J4-Z* | 19N | | 8 | P3- 8 | 19N | 18 | 49 |
| A 113R | | J4-Y* | 19N | | 8 | P3- 3 | 19N | 18 | 49 |
| A 114 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |
| A 114A | 4 | SHLD A114 | 25N | | | E16 | 25N | 14 13 | |
| A 114L | | J4-CC | 19N | | 8 | P3-30 | 19N | 18 | 49 |
| A 114R | | J4-BB | 19N | | 8 | P3-13 | 19N | 18 | 49 |
| A 115 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |
| A 115A | 4 | SHLD A115 | 25N | | | E16 | 25N | | |
| A 115L | | J4-EE | 19N | | 8 | P3-19 | 19N | 18 | 49 |
| A 115R | | J4-DD | 19N | | 8 | P3-24 | 19N | 18 | 49 |
| A 116 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |
| A 116A | 4 | SHLD A116 | 25N | | | E16 | 25N | | |
| A 116L | | J4-GG | 19N | | 8 | P10-37 | 19N | 18 | 7 |
| A 116R | | J4-FF | 19N | | 8 | P10-38 | 19N | 18 | 7 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900097

SCALE - NONE | REV LTR B | SHEET 33 OF 78

MIL 2085 · 4-63 WIR

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | STRIP 2 TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | STRIP 2 TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 117 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |
| A 117A | 4 | SHLD A117 | 25N | | | E16 | 25N | | |
| A 117L | | J4-JJ | 19N | | 8 | P3- 9 | 19N | 18 | 49 |
| A 117R | | J4-HH | 19N | | 8 | P3- 2 | 19N | 18 | 49 |
| A 118 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |
| A 118A | 4 | SHLD A118 | 25N | | | E16 | 25N | | |
| A 118L | | J4-LL | 19N | | 8 | P3-10 | 19N | 18 | 49 |
| A 118R | | J4-KK | 19N | | 8 | P3- 1 | 19N | 18 | 49 |
| A 119 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |
| A 119A | 4 | SHLD A119 | 25N | | | E16 | 25N | | |
| A 119L | | J4-NN | 19N | | 8 | P3-20 | 19N | 18 | 49 |
| A 119R | | J4-MM | 19N | | 8 | P3-23 | 19N | 18 | 49 |
| A 120 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |
| A 120A | 4 | SHLD A120 | 25N | | | E17 | 25N | 14 13 | |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | STRIP 2 TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | STRIP 2 TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|
| A 120L | | J5-C | 19N | | 3 | P6-58 | 19N | 18 | 38 |
| A 120R | | J5-B | 19N | | 3 | P6-60 | 19N | 18 | 38 |
| A 121 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |
| A 121A | 4 | SHLD A121 | 25N | | | E17 | 25N | | |
| A 121L | | J5-E | 19N | | 3 | P6-57 | 19N | 18 | 38 |
| A 121R | | J5-D | 19N | | 3 | P6-61 | 19N | 18 | 38 |
| A 122 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |
| A 122A | 4 | SHLD A122 | 25N | | | E17 | 25N | | |
| A 122L | | J5-G | 19N | | 3 | P6-56 | 19N | 18 | 38 |
| A 122R | | J5-F | 19N | | 3 | P6-62 | 19N | 18 | 38 |
| A 123 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |
| A 123A | 4 | SHLD A123 | 25N | | | E17 | 25N | | |
| A 123L | | J5-J | 19N | | 3 | P6-55 | 19N | 18 | 38 |
| A 123R | | J5-H | 19N | | 3 | P6-63 | 19N | 18 | 38 |
| A 124 | 1 | | | 8 9 | | | | | |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900097

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR INDIVIDUAL LENGTH | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
| | | | | | A 10 | | | | | A 11 | |
| A 124A | 4 | SHLD A124 | 25 | N | | | E17 | 25 | N | | |
| A 124L | | J5-L | 19 | N | | 3 | P6-54 | 19 | N | 18 | 38 |
| A 124R | | J5-K | 19 | N | | 3 | P6-64 | 19 | N | 18 | 38 |
| A 125 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 125A | 4 | SHLD A125 | 25 | N | | | E17 | 25 | N | | |
| A 125L | | J5-N | 19 | N | | 3 | P6-42 | 19 | N | 18 | 38 |
| A 125R | | J5-M | 19 | N | | 3 | P6-44 | 19 | N | 18 | 38 |
| A 126 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 126A | 4 | SHLD A126 | 25 | N | | | E17 | 25 | N | | |
| A 126L | | J5-R | 19 | N | | 3 | P6-41 | 19 | N | 18 | 38 |
| A 126R | | J5-P | 19 | N | | 3 | P6-45 | 19 | N | 18 | 38 |
| A 127 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 127A | 4 | SHLD A127 | 25 | N | | | E18 | 25 | N | 14 13 | |
| A 127L | | J5-T | 19 | N | | 3 | P6-40 | 19 | N | 18 | 38 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
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GCF WIRE HARNESS A B 1900097

| CONDUCTOR INDIVIDUAL LENGTH | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 127R | | J5-S | 19 | N | | 3 | P6-46 | 19 | N | 18 | 38 |
| A 128 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 128A | 4 | SHLD A128 | 25 | N | | | E18 | 25 | N | | |
| A 128L | | J5-V | 19 | N | | 3 | P6-39 | 19 | N | 18 | 38 |
| A 128R | | J5-U | 19 | N | | 3 | P6-47 | 19 | N | 18 | 38 |
| A 129 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 129A | 4 | SHLD A129 | 25 | N | | | E18 | 25 | N | | |
| A 129L | | J5-X | 19 | N | | 3 | P6-38 | 19 | N | 18 | 38 |
| A 129R | | J5-W | 19 | N | | 3 | P6-48 | 19 | N | 18 | 38 |
| A 130 | 3 | J5-Y | 19 | N | | 3 | P5-27 | 19 | N | 18 | 37 |
| A 131 | 3 | J5-Z | 19 | N | | 3 | P5-33 | 19 | N | 18 | 37 |
| A 132 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 10 | |
| A 132A | 4 | SHLD A132 | 25 | N | | | E18 | 25 | N | | |
| A 132L | | J5-C* | 19 | N | | 3 | P6-53 | 19 | N | 18 | 38 |
| A 132R | | J5-B* | 19 | N | | 3 | P6-65 | 19 | N | 18 | 38 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR INDIVIDUAL LENGTH | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 133 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 133A | 4 | SHLD A133 | 25 | N | | | E18 | 25 | N | | |
| A 133L | | J5-E* | 19 | N | | 3 | P6-52 | 19 | N | 18 | 38 |
| A 133R | | J5-D* | 19 | N | | 3 | P6-66 | 19 | N | 18 | 38 |
| A 134 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 134A | 4 | SHLD A134 | 25 | N | | | E18 | 25 | N | | |
| A 134L | | J5-G* | 19 | N | | 3 | P6-17 | 19 | N | 18 | 38 |
| A 134R | | J5-F* | 19 | N | | 3 | P6- 6 | 19 | N | 18 | 38 |
| A 135 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 135A | 4 | SHLD A135 | 25 | N | | | E18 | 25 | N | | |
| A 135L | | J5-J* | 19 | N | | 3 | P6-18 | 19 | N | 18 | 38 |
| A 135R | | J5-H* | 19 | N | | 3 | P6- 5 | 19 | N | 18 | 38 |
| A 136 | 3 | J5-I* | 19 | N | | 3 | P6-27 | 19 | N | 18 | 38 |
| A 137 | 3 | J5-K* | 19 | N | | 3 | P6-33 | 19 | N | 18 | 38 |
| A 138 | 1 | | | | 8 9 | | | | | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR INDIVIDUAL LENGTH | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
| | | | | | A 10 | | | | | A 11 | |
| A 138A | 4 | SHLD A138 | 25 | N | | | E19 | 25 | N | 14 13 | |
| A 138L | | J5-N* | 19 | N | | 3 | P6-37 | 19 | N | 18 | 38 |
| A 138R | | J5-M* | 19 | N | | 3 | P6-49 | 19 | N | 18 | 38 |
| A 139 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 139A | 4 | SHLD A139 | 25 | N | | | E19 | 25 | N | | |
| A 139L | | J5-R* | 19 | N | | 3 | P6-36 | 19 | N | 18 | 38 |
| A 139R | | J5-P* | 19 | N | | 3 | P6-50 | 19 | N | 18 | 38 |
| A 140 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 140A | 4 | SHLD A140 | 25 | N | | | E19 | 25 | N | | |
| A 140L | | J5-T* | 19 | N | | 3 | P6-29 | 19 | N | 18 | 38 |
| A 140R | | J5-S* | 19 | N | | 3 | P6-14 | 19 | N | 18 | 38 |
| A 141 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 141A | 4 | SHLD A141 | 25 | N | | | E19 | 25 | N | | |
| A 141L | | J5-V* | 19 | N | | 3 | P9-31 | 19 | N | 18 | 9 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR INDIVIDUAL LENGTH | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2> | TIN | TERMINATION SPEC. 1> ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2> | TIN | TERMINATION SPEC 1> ITEM NO. | NO. |
| A 141R | | J5-U* | 19 | N | | 3 | P9-32 | 19 | N | 18 | 9 |
| A 142 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 142A | 4 | SHLD A142 | 25 | N | | | E19 | 25 | N | | |
| A 142L | | J5-X* | 19 | N | | 3 | P6- 7 | 19 | N | 18 | 38 |
| A 142R | | J5-W* | 19 | N | | 3 | P6- 4 | 19 | N | 18 | 38 |
| A 143 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 143A | 4 | SHLD A143 | 25 | N | | | E19 | 25 | N | | |
| A 143L | | J5-Z* | 19 | N | | 3 | P6- 8 | 19 | N | 18 | 38 |
| A 143R | | J5-Y* | 19 | N | | 3 | P6- 3 | 19 | N | 18 | 38 |
| A 144 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 144A | 4 | SHLD A144 | 25 | N | | | E20 | 25 | N | 14 13 | |
| A 144L | | J5-CC | 19 | N | | 3 | P6-30 | 19 | N | 18 | 38 |
| A 144R | | J5-BB | 19 | N | | 3 | P6-13 | 19 | N | 18 | 38 |
| A 145 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR INDIVIDUAL LENGTH | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2> | TIN | TERMINATION SPEC. 1> ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2> | TIN | TERMINATION SPEC 1> ITEM NO. | NO. |
| A 145A | 4 | SHLD A145 | 25 | N | | | E20 | 25 | N | | |
| A 145L | | J5-EE | 19 | N | | 3 | P6-19 | 19 | N | 18 | 38 |
| A 145R | | J5-DD | 19 | N | | 3 | P6-24 | 19 | N | 18 | 38 |
| A 146 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 146A | 4 | SHLD A146 | 25 | N | | | E20 | 25 | N | | |
| A 146L | | J5-GG | 19 | N | | 3 | P9-38 | 19 | N | 18 | 9 |
| A 146R | | J5-FF | 19 | N | | 3 | P9-39 | 19 | N | 18 | 9 |
| A 147 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 147A | 4 | SHLD A147 | 25 | N | | | E20 | 25 | N | | |
| A 147L | | J5-JJ | 19 | N | | 3 | P6- 9 | 19 | N | 18 | 38 |
| A 147R | | J5-HH | 19 | N | | 3 | P6- 2 | 19 | N | 18 | 38 |
| A 148 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 148A | 4 | SHLD A148 | 25 | N | | | E20 | 25 | N | | |
| A 148L | | J5-LL | 19 | N | | 3 | P6-10 | 19 | N | 18 | 38 |
| A 148R | | J5-KK | 19 | N | | 3 | P6- 1 | 19 | N | 18 | 38 |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR INDIVIDUAL LENGTH | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2> | TIN | TERMINATION SPEC. 1> ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2> | TIN | TERMINATION SPEC 1> ITEM NO. | NO. |
| A 149 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 149A | 4 | SHLD A149 | 25 | N | | | E20 | 25 | N | | |
| A 149L | | J5-NN | 19 | N | | 3 | P6-20 | 19 | N | 18 | 38 |
| A 149R | | J5-MM | 19 | N | | 3 | P6-23 | 19 | N | 18 | 38 |
| A 150 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 150A | 4 | SHLD A150 | 25 | N | | | E21 | 25 | N | 14 13 | |
| A 150L | | J6-C | 19 | N | | 2 | P5-58 | 19 | N | 18 | 37 |
| A 150R | | J6-B | 19 | N | | 2 | P5-60 | 19 | N | 18 | 37 |
| A 151 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 151A | 4 | SHLD A151 | 25 | N | | | E21 | 25 | N | | |
| A 151L | | J6-E | 19 | N | | 2 | P5-57 | 19 | N | 18 | 37 |
| A 151R | | J6-D | 19 | N | | 2 | P5-61 | 19 | N | 18 | 37 |
| A 152 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 152A | 4 | SHLD A152 | 25 | N | | | E21 | 25 | N | | |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR INDIVIDUAL LENGTH | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2> | TIN | TERMINATION SPEC. 1> ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2> | TIN | TERMINATION SPEC 1> ITEM NO. | NO. |
| A 152L | | J6-G | 19 | N | | 2 | P5-56 | 19 | N | 18 | 37 |
| A 152R | | J6-F | 19 | N | | 2 | P5-62 | 19 | N | 18 | 37 |
| A 153 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 153A | 4 | SHLD A153 | 25 | N | | | E21 | 25 | N | | |
| A 153L | | J6-J | 19 | N | | 2 | P5-55 | 19 | N | 18 | 37 |
| A 153R | | J6-H | 19 | N | | 2 | P5-63 | 19 | N | 18 | 37 |
| A 154 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 154A | 4 | SHLD A154 | 25 | N | | | E21 | 25 | N | | |
| A 154L | | J6-L | 19 | N | | 2 | P5-54 | 19 | N | 18 | 37 |
| A 154R | | J6-K | 19 | N | | 2 | P5-64 | 19 | N | 18 | 37 |
| A 155 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 155A | 4 | SHLD A155 | 25 | N | | | E22 | 25 | N | 14 13 | |
| A 155L | | J6-N | 19 | N | | 2 | P5-42 | 19 | N | 18 | 37 |
| A 155R | | J6-M | 19 | N | | 2 | P5-44 | 19 | N | 18 | 37 |
| A 156 | 1 | | | | 8 9 | | | | | | |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR | | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
| | | | | | | A 10 | | | | | A 11 | |
| A 156A | 4 | | SHLD A156 | 25 | N | | | E22 | 25 | N | | |
| A 156L | | | J6-R | 19 | N | | 2 | P5-41 | 19 | N | 18 | 37 |
| A 156R | | | J6-P | 19 | N | | 2 | P5-45 | 19 | N | 18 | 37 |
| A 157 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 157A | 4 | | SHLD A157 | 25 | N | | | E22 | 25 | N | | |
| A 157L | | | J6-T | 19 | N | | 2 | P5-40 | 19 | N | 18 | 37 |
| A 157R | | | J6-S | 19 | N | | 2 | P5-46 | 19 | N | 18 | 37 |
| A 158 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 158A | 4 | | SHLD A158 | 25 | N | | | E22 | 25 | N | | |
| A 158L | | | J6-V | 19 | N | | 2 | P5-39 | 19 | N | 18 | 37 |
| A 158R | | | J6-U | 19 | N | | 2 | P5-47 | 19 | N | 18 | 37 |
| A 159 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 159A | 4 | | SHLD A159 | 25 | N | | | E22 | 25 | N | | |
| A 159L | | | J6-X | 19 | N | | 2 | P5-38 | 19 | N | 18 | 37 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR | | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 159R | | | J6-W | 19 | N | | 2 | P5-48 | 19 | N | 18 | 37 |
| A 160 | 3 | | J6-Y | 19 | N | | 2 | P7-27 | 19 | N | 18 | 39 |
| A 161 | 3 | | J6-Z | 19 | N | | 2 | P7-33 | 19 | N | 18 | 39 |
| A 162 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 162A | 4 | | SHLD A162 | 25 | N | | | E23 | 25 | N | 14 13 | |
| A 162L | | | J6-C* | 19 | N | | 2 | P5-53 | 19 | N | 18 | 37 |
| A 162R | | | J6-B* | 19 | N | | 2 | P5-65 | 19 | N | 18 | 37 |
| A 163 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 163A | 4 | | SHLD A163 | 25 | N | | | E23 | 25 | N | | |
| A 163L | | | J6-E* | 19 | N | | 2 | P5-52 | 19 | N | 18 | 37 |
| A 163R | | | J6-D* | 19 | N | | 2 | P5-66 | 19 | N | 18 | 37 |
| A 164 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 164A | 4 | | SHLD A164 | 25 | N | | | E23 | 25 | N | | |
| A 164L | | | J6-G* | 19 | N | | 2 | P5-17 | 19 | N | 18 | 37 |
| A 164R | | | J6-F* | 19 | N | | 2 | P5- 6 | 19 | N | 18 | 37 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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|---|---|---|
| MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900097 |
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| CONDUCTOR | | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 165 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 165A | 4 | | SHLD A165 | 25 | N | | | E23 | 25 | N | | |
| A 165L | | | J6-J* | 19 | N | | 2 | P5-18 | 19 | N | 18 | 37 |
| A 165R | | | J6-H* | 19 | N | | 2 | P5- 5 | 19 | N | 18 | 37 |
| A 166 | 3 | | J6-I* | 19 | N | | 2 | P8-27 | | | | 40 |
| A 167 | 3 | | J6-K* | 19 | N | | 2 | P8-33 | | | | 40 |
| A 168 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 168A | 4 | | SHLD A168 | 25 | N | | | E23 | 25 | N | | |
| A 168L | | | J6-N* | 19 | N | | 2 | P5-37 | 19 | N | 18 | 37 |
| A 168R | | | J6-M* | 19 | N | | 2 | P5-49 | 19 | N | 18 | 37 |
| A 169 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 169A | 4 | | SHLD A169 | 25 | N | | | E24 | 25 | N | 14 13 | |
| A 169L | | | J6-R* | 19 | N | | 2 | P5-36 | 19 | N | 18 | 37 |
| A 169R | | | J6-P* | 19 | N | | 2 | P5-50 | 19 | N | 18 | 37 |
| A 170 | 1 | | | | | 8 9 | | | | | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

| | | |
|---|---|---|
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| CONDUCTOR | | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
| | | | | | | A 10 | | | | | A 11 | |
| A 170A | 4 | | SHLD A170 | 25 | N | | | E24 | 25 | N | | |
| A 170L | | | J6-T* | 19 | N | | 2 | P5-29 | 19 | N | 18 | 37 |
| A 170R | | | J6-S* | 19 | N | | 2 | P5-14 | 19 | N | 18 | 37 |
| A 171 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 171A | 4 | | SHLD A171 | 25 | N | | | E24 | 25 | N | | |
| A 171L | | | J6-V* | 19 | N | | 2 | P9-42 | 19 | N | 18 | 9 |
| A 171R | | | J6-U* | 19 | N | | 2 | P9-43 | 19 | N | 18 | 9 |
| A 172 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 172A | 4 | | SHLD A172 | 25 | N | | | E24 | 25 | N | | |
| A 172L | | | J6-X* | 19 | N | | 2 | P5- 7 | 19 | N | 18 | 37 |
| A 172R | | | J6-W* | 19 | N | | 2 | P5- 4 | 19 | N | 18 | 37 |
| A 173 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 173A | 4 | | SHLD A173 | 25 | N | | | E24 | 25 | N | | |
| A 173L | | | J6-Z* | 19 | N | | 2 | P5- 8 | 19 | N | 18 | 37 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

| | | |
|---|---|---|
| MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900097 |
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GCF WIRE HARNESS A B 1900097

| CONDUCTOR INDIVIDUAL LENGTH | | FROM | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 173R | | J6-Y* | 19N | | 2 | P5- 3 | 19N | 18 | 37 |
| A 174 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |
| A 174A | 4 | SHLD A174 | 25N | | | E25 | 25N | 14 13 | |
| A 174L | | J6-CC | 19N | | 2 | P5-30 | 19N | 18 | 37 |
| A 174R | | J6-BB | 19N | | 2 | P5-13 | 19N | 18 | 37 |
| A 175 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |
| A 175A | 4 | SHLD A175 | 25N | | | E25 | 25N | | |
| A 175L | | J6-EE | 19N | | 2 | P5-19 | 19N | 18 | 37 |
| A 175R | | J6-DD | 19N | | 2 | P5-24 | 19N | 18 | 37 |
| A 176 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |
| A 176A | 4 | SHLD A176 | 25N | | | E25 | 25N | | |
| A 176L | | J6-GG | 19N | | 2 | P9-49 | 19N | 18 | 9 |
| A 176R | | J6-FF | 19N | | 2 | P9-50 | 19N | 18 | 9 |
| A 177 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR INDIVIDUAL LENGTH | | FROM | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 177A | 4 | SHLD A177 | 25N | | | E25 | 25N | | |
| A 177L | | J6-JJ | 19N | | 2 | P5- 9 | | | 37 |
| A 177R | | J6-HH | 19N | | 2 | P5- 2 | | | 37 |
| A 178 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |
| A 178A | 4 | SHLD A178 | 25N | | | E25 | 25N | | |
| A 178L | | J6-LL | 19N | | 2 | P5-10 | 19N | 18 | 37 |
| A 178R | | J6-KK | 19N | | 2 | P5- 1 | 19N | 18 | 37 |
| A 179 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |
| A 179A | 4 | SHLD A179 | 25N | | | E25 | 25N | | |
| A 179L | | J6-NN | 19N | | 2 | P5-20 | 19N | 18 | 37 |
| A 179R | | J6-MM | 19N | | 2 | P5-23 | 19N | 18 | 37 |
| A 180 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |
| A 180A | 4 | SHLD A180 | 25N | | | E26 | 25N | 14 13 | |
| A 180L | | J7-A* | 19N | | 1 | P10-52 | 19N | 18 | 7 |
| A 180R | | J7-A | 19N | | 1 | P10-53 | 19N | 18 | 7 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR INDIVIDUAL LENGTH | | FROM | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 181 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |
| A 181A | 4 | SHLD A181 | 25N | | | E26 | 25N | | |
| A 181L | | J7-C | 19N | | 1 | P1-58 | 19N | 18 | 46 |
| A 181R | | J7-B | 19N | | 1 | P1-60 | 19N | 18 | 46 |
| A 182 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |
| A 182A | 4 | SHLD A182 | 25N | | | E26 | 25N | | |
| A 182L | | J7-E | 19N | | 1 | P1-57 | 19N | 18 | 46 |
| A 182R | | J7-D | 19N | | 1 | P1-61 | 19N | 18 | 46 |
| A 183 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |
| A 183A | 4 | SHLD A183 | 25N | | | E26 | 25N | | |
| A 183L | | J7-G | 19N | | 1 | P1-56 | 19N | 18 | 46 |
| A 183R | | J7-F | 19N | | 1 | P1-62 | 19N | 18 | 46 |
| A 184 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |
| A 184A | 4 | SHLD A184 | 25N | | | E26 | 25N | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR INDIVIDUAL LENGTH | | FROM | | | | TO | | | |
|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 184L | | J7-J | 19N | | 1 | P1-55 | 19N | 18 | 46 |
| A 184R | | J7-H | 19N | | 1 | P1-63 | 19N | 18 | 46 |
| A 185 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |
| A 185A | 4 | SHLD A185 | 25N | | | E26 | 25N | | |
| A 185L | | J7-L | 19N | | 1 | P1-54 | 19N | 18 | 46 |
| A 185R | | J7-K | 19N | | 1 | P1-64 | 19N | 18 | 46 |
| A 186 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |
| A 186A | 4 | SHLD A186 | 25N | | | E27 | 25N | 14 13 | |
| A 186L | | J7-N | 19N | | 1 | P2-58 | 19N | 18 | 47 |
| A 186R | | J7-M | 19N | | 1 | P2-60 | 19N | 18 | 47 |
| A 187 | 1 | | | 8 9 | | | | | |
| | | | | A 10 | | | | A 11 | |
| A 187A | 4 | SHLD A187 | 25N | | | E27 | 25N | | |
| A 187L | | J7-R | 19N | | 1 | P2-57 | 19N | 18 | 47 |
| A 187R | | J7-P | 19N | | 1 | P2-61 | 19N | 18 | 47 |
| A 188 | 1 | | | 8 9 | | | | | |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | A 10 | | | | | A 11 | |
| A 188A | 4 | SHLD A188 | 25 | N | | | E27 | 25 | N | | |
| A 188L | | J7-T | 19 | N | | 1 | P2-56 | 19 | N | 18 | 47 |
| A 188R | | J7-S | 19 | N | | 1 | P2-62 | 19 | N | 18 | 47 |
| A 189 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 189A | 4 | SHLD A189 | 25 | N | | | E27 | 25 | N | | |
| A 189L | | J7-V | 19 | N | | 1 | P2-55 | 19 | N | 18 | 47 |
| A 189R | | J7-U | 19 | N | | 1 | P2-63 | 19 | N | 18 | 47 |
| A 190 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 190A | 4 | SHLD A190 | 25 | N | | | E27 | 25 | N | | |
| A 190L | | J7-X | 19 | N | | 1 | P2-54 | 19 | N | 18 | 47 |
| A 190R | | J7-W | 19 | N | | 1 | P2-64 | 19 | N | 18 | 47 |
| A 191 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 191A | 4 | SHLD A191 | 25 | N | | | E27 | 25 | N | | |
| A 191L | | J7-Z | 19 | N | | 1 | P10-48 | 19 | N | 18 | 7 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A 191R | | J7-Y | 19 | N | | 1 | P10-49 | 19 | N | 18 | 7 |
| A 192 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 192A | 4 | SHLD A192 | 25 | N | | | E28 | 25 | N | 14 13 | |
| A 192L | | J7-C* | 19 | N | | 1 | P1-53 | 19 | N | 18 | 46 |
| A 192R | | J7-B* | 19 | N | | 1 | P1-65 | 19 | N | 18 | 46 |
| A 193 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 193A | 4 | SHLD A193 | 25 | N | | | E28 | 25 | N | | |
| A 193L | | J7-E* | 19 | N | | 1 | P1-52 | 19 | N | 18 | 46 |
| A 193R | | J7-D* | 19 | N | | 1 | P1-66 | 19 | N | 18 | 46 |
| A 194 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 194A | 4 | SHLD A194 | 25 | N | | | E28 | 25 | N | | |
| A 194L | | J7-G* | 19 | N | | 1 | P1-17 | 19 | N | 18 | 46 |
| A 194R | | J7-F* | 19 | N | | 1 | P1- 6 | 19 | N | 18 | 46 |
| A 195 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A 195A | 4 | SHLD A195 | 25 | N | | | E28 | 25 | N | | |
| A 195L | | J7-J* | 19 | N | | 1 | P1-18 | 19 | N | 18 | 46 |
| A 195R | | J7-H* | 19 | N | | 1 | P1- 5 | 19 | N | 18 | 46 |
| A 196 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 196A | 4 | SHLD A196 | 25 | N | | | E28 | 25 | N | | |
| A 196L | | J7-K* | 19 | N | | 1 | P10-59 | 19 | N | 18 | 7 |
| A 196R | | J7-I* | 19 | N | | 1 | P10-60 | 19 | N | 18 | 7 |
| A 197 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 197A | 4 | SHLD A197 | 25 | N | | | E28 | 25 | N | | |
| A 197L | | J7-N* | 19 | N | | 1 | P2-53 | 19 | N | 18 | 47 |
| A 197R | | J7-M* | 19 | N | | 1 | P2-65 | 19 | N | 18 | 47 |
| A 198 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 198A | 4 | SHLD A198 | 25 | N | | | E29 | 25 | N | 14 13 | |
| A 198L | | J7-R* | 19 | N | | 1 | P2-52 | 19 | N | 18 | 47 |
| A 198R | | J7-P* | 19 | N | | 1 | P2-66 | 19 | N | 18 | 47 |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR INDIVIDUAL LENGTH NUMBER | ITEM NO. | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A 199 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 199A | 4 | SHLD A199 | 25 | N | | | E29 | 25 | N | | |
| A 199L | | J7-T* | 19 | N | | 1 | P2-17 | 19 | N | 18 | 47 |
| A 199R | | J7-S* | 19 | N | | 1 | P2- 6 | 19 | N | 18 | 47 |
| A 200 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 200A | 4 | SHLD A200 | 25 | N | | | E29 | 25 | N | | |
| A 200L | | J7-V* | 19 | N | | 1 | P2-18 | 19 | N | 18 | 47 |
| A 200R | | J7-U* | 19 | N | | 1 | P2- 5 | 19 | N | 18 | 47 |
| A 201 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 201A | 4 | SHLD A201 | 25 | N | | | E29 | 25 | N | | |
| A 201L | | J7-X* | 19 | N | | 1 | P1- 7 | 19 | N | 18 | 46 |
| A 201R | | J7-W* | 19 | N | | 1 | P1- 4 | 19 | N | 18 | 46 |
| A 202 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 202A | 4 | SHLD A202 | 25 | N | | | E29 | 25 | N | | |

1 > THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 > DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900097
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| CONDUCTOR<br>INDIVIDUAL LENGTH |  |  | FROM |  |  |  |  | TO |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD<br>STRIP WIRE OR JACKET<br>CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. 1<br>ITEM NO. | NO. | CUT WIRE OR SHIELD<br>STRIP WIRE OR JACKET<br>CIRCUIT POINT | 2 | T I N | TERMINATION SPEC 1<br>ITEM NO. | NO. |
| A 202L |  |  | J7-Z* | 19 | N |  | 1 | P1- 8 | 19 | N | 18 | 46 |
| A 202R |  |  | J7-Y* | 19 | N |  | 1 | P1- 3 | 19 | N | 18 | 46 |
| A 203 | 1 |  |  |  |  | 8 9 |  |  |  |  |  |  |
|  |  |  |  |  |  | A 10 |  |  |  |  | A 11 |  |
| A 203A | 4 |  | SHLD A203 | 25 | N |  |  | E29 | 25 | N |  |  |
| A 203L |  |  | J7-PP | 19 | N |  | 1 | P10-63 | 19 | N | 18 | 7 |
| A 203R |  |  | J7-AA | 19 | N |  | 1 | P10-64 | 19 | N | 18 | 7 |
| A 204 | 1 |  |  |  |  | 8 9 |  |  |  |  |  |  |
|  |  |  |  |  |  | A 10 |  |  |  |  | A 11 |  |
| A 204A | 4 |  | SHLD A204 | 25 | N |  |  | E30 | 25 | N | 14 13 |  |
| A 204L |  |  | J7-CC | 19 | N |  | 1 | P2- 7 | 19 | N | 18 | 47 |
| A 204R |  |  | J7-BB | 19 | N |  | 1 | P2- 4 | 19 | N | 18 | 47 |
| A 205 | 1 |  |  |  |  | 8 9 |  |  |  |  |  |  |
|  |  |  |  |  |  | A 10 |  |  |  |  | A 11 |  |
| A 205A | 4 |  | SHLD A205 | 25 | N |  |  | E30 | 25 | N |  |  |
| A 205L |  |  | J7-EE | 19 | N |  | 1 | P2- 8 | 19 | N |  | 47 |
| A 205R |  |  | J7-DD | 19 | N |  | 1 | P2- 3 | 19 | N |  | 47 |
| A 206 | 1 |  |  |  |  | 8 9 |  |  |  |  |  |  |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

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GCF WIRE HARNESS A B 1900097

| CONDUCTOR<br>INDIVIDUAL LENGTH |  |  | FROM |  |  |  |  | TO |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD<br>STRIP WIRE OR JACKET<br>CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. 1<br>ITEM NO. | NO. | CUT WIRE OR SHIELD<br>STRIP WIRE OR JACKET<br>CIRCUIT POINT | 2 | T I N | TERMINATION SPEC 1<br>ITEM NO. | NO. |
|  |  |  |  |  |  | A 10 |  |  |  |  | A 11 |  |
| A 206A | 4 |  | SHLD A206 | 25 | N |  |  | E30 | 25 | N |  |  |
| A 206L |  |  | J7-GG | 19 | N |  | 1 | P2- 9 | 19 | N | 18 | 47 |
| A 206R |  |  | J7-FF | 19 | N |  | 1 | P2- 2 | 19 | N | 18 | 47 |
| A 207 | 1 |  |  |  |  | 8 9 |  |  |  |  |  |  |
|  |  |  |  |  |  | A 10 |  |  |  |  | A 11 |  |
| A 207A | 4 |  | SHLD A207 | 25 | N |  |  | E30 | 25 | N |  |  |
| A 207L |  |  | J7-JJ | 19 | N |  | 1 | P1- 9 | 19 | N | 18 | 46 |
| A 207R |  |  | J7-HH | 19 | N |  | 1 | P1- 2 | 19 | N | 18 | 46 |
| A 208 | 1 |  |  |  |  | 8 9 |  |  |  |  |  |  |
|  |  |  |  |  |  | A 10 |  |  |  |  | A 11 |  |
| A 208A | 4 |  | SHLD A208 | 25 | N |  |  | E30 | 25 | N |  |  |
| A 208L |  |  | J7-LL | 19 | N |  | 1 | P1-10 | 19 | N | 18 | 46 |
| A 208R |  |  | J7-KK | 19 | N |  | 1 | P1- 1 | 19 | N | 18 | 46 |
| A 209 | 1 |  |  |  |  | 8 9 |  |  |  |  |  |  |
|  |  |  |  |  |  | A 10 |  |  |  |  | A 11 |  |
| A 209A | 4 |  | SHLD A209 | 25 | N |  |  | E30 | 25 | N |  |  |
| A 209L |  |  | J7-NN | 19 | N |  | 1 | P2-10 | 19 | N | 18 | 47 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GCF WIRE HARNESS A E 1900097

| CONDUCTOR<br>INDIVIDUAL LENGTH |  |  | FROM |  |  |  |  | TO |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD<br>STRIP WIRE OR JACKET<br>CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. 1<br>ITEM NO. | NO. | CUT WIRE OR SHIELD<br>STRIP WIRE OR JACKET<br>CIRCUIT POINT | 2 | T I N | TERMINATION SPEC 1<br>ITEM NO. | NO. |
| A 209R |  |  | J7-MM | 19 | N |  | 1 | P2- 1 | 19 | N | 18 | 47 |
| A 210 | 1 |  |  |  |  | 8 9 |  |  |  |  |  |  |
|  |  |  |  |  |  | A 10 |  |  |  |  | A 11 |  |
| A 210A | 4 |  | SHLD A210 | 25 | N |  |  | E51 | 25 | N |  |  |
| A 210L |  |  | J1-B | 19 | N |  | 11 | J9-J | 19 | N | 18 | 12 |
| A 210R |  |  | J1-C | 19 | N |  | 11 | J9-H | 19 | N | 18 | 12 |
| A 211 | 2 |  |  |  |  | 12 |  |  |  |  | 6 7 11 |  |
| A 211B | 4 |  | E47 | 25 | N |  | 48 | SHLD A211 | 25 | N |  |  |
| A 211W |  |  | J8-M | 19 | N | 18 | 11 | S3SW2-NO | 25 | Y |  | 28 |
| A 212 | 3 |  | J8-C | 19 | N | 18 | 11 | E36 | 25 | N |  |  |
| A 213 | 3 |  | J8-B | 19 | N | 18 | 11 | E35 | 25 | N |  |  |
| A 214 | 3 |  | J8-D | 19 | N | 18 | 11 | E37 | 25 | N |  |  |
| A 215 | 3 |  | J9-C | 19 | N | 18 | 12 | E36 | 25 | N |  |  |
| A 216 | 3 |  | J9-B | 19 | N | 18 | 12 | E35 | 25 | N |  |  |
| A 217 | 1 |  |  |  |  |  |  |  |  |  | 8 9 |  |
|  |  |  |  |  |  | A 11 |  |  |  |  | A 10 |  |
| A 217B | 4 |  | E45 |  |  |  | 48 | SHLD A217 | 25 | N |  |  |
| A 217L |  |  | J9-N | 19 | N |  | 12 | S7- 2B | 25 | Y |  | 23 |

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| CONDUCTOR<br>INDIVIDUAL LENGTH |  |  | FROM |  |  |  |  | TO |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD<br>STRIP WIRE OR JACKET<br>CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. 1<br>ITEM NO. | NO. | CUT WIRE OR SHIELD<br>STRIP WIRE OR JACKET<br>CIRCUIT POINT | 2 | T I N | TERMINATION SPEC 1<br>ITEM NO. | NO. |
| A 217R |  |  | J9-M | 19 | N |  | 12 | S7- 2A | 25 | Y |  | 23 |
| A 218 | 1 |  |  |  |  |  |  |  |  |  | 8 9 |  |
|  |  |  |  |  |  | A 11 |  |  |  |  | A 10 |  |
| A 218B | 4 |  | E47 | 25 | N |  | 48 | SHLD A218 | 25 | N |  |  |
| A 218L |  |  | J9-R | 19 | N | 18 | 12 | S6SW2-NO | 25 | Y |  | 31 |
| A 218R |  |  | J9-P | 19 | N | 18 | 12 | S6SW1-NO | 25 | Y |  | 31 |
| A 219 | 3 |  | J10-C | 19 | N | 18 | 16 | E36 | 25 | N |  |  |
| A 220 | 3 |  | J10-B | 19 | N | 18 | 16 | E35 | 25 | N |  |  |
| A 221 | 3 |  | J10-D | 19 | N | 18 | 16 | E37 | 25 | N |  |  |
| A 222 | 1 |  |  |  |  |  |  |  |  |  | 8 9 |  |
|  |  |  |  |  |  | A 11 |  |  |  |  | A 10 |  |
| A 222B | 4 |  | E48 | 25 | N | 14 13 |  | SHLD A222 | 25 | N |  |  |
| A 222L |  |  | J10-R | 19 | N | 18 | 16 | P9- 3 | 19 | N | 19 | 9 |
| A 222R |  |  | J10-P | 19 | N | 18 | 16 | P9- 4 | 19 | N | 19 | 9 |
| A 223 | 1 |  |  |  |  |  |  |  |  |  | 8 9 |  |
|  |  |  |  |  |  | A 11 |  |  |  |  | A 10 |  |
| A 223B | 4 |  | E45 | 25 | N |  | 48 | SHLD A223 | 25 | N |  |  |
| A 223L |  |  | J10-N | 19 | N | 18 | 16 | S7- 4B | 25 | Y |  | 23 |

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| CONDUCTOR INDIVIDUAL LENGTH | | | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | FROM TERMINATION SPEC. 1 | | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | TO TERMINATION SPEC 1 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2 | CIRCUIT POINT | 2 | TIN | 2 | ITEM NO. | NO. | CIRCUIT POINT | 2 | TIN | 2 | ITEM NO. | NO. |
| A 223R | | | J10-M | 19 | N | | 18 | 16 | S7- 4A | 25 | Y | | | 23 |
| A 224 | 3 | | J11-C | 19 | N | | 18 | 21 | E36 | 25 | N | | | |
| A 225 | 3 | | J11-B | 19 | N | | 18 | 21 | E35 | 25 | N | | | |
| A 226 | 3 | | J11-D | 19 | N | | 18 | 21 | E37 | 25 | N | | | |
| A 227 | 1 | | | | | | 8 9 | | | | | | | |
| | | | | | | | A 10 | | | | | | A 11 | |
| A 227A | 4 | | SHLD A227 | 25 | N | | | | E44 | 25 | N | | 14 13 | |
| A 227L | | | J1-D | 19 | N | | | 21 | J12-J | 19 | N | | 18 | 19 |
| A 227R | | | J1-E | 19 | N | | | 21 | J12-H | 19 | N | | 18 | 19 |
| A 228 | 2 | | | | | | 12 | | | | | | 6 7 11 | |
| A 228B | 4 | | E47 | 25 | N | | | 48 | SHLD A228 | 25 | N | | | |
| A 228W | | | J11-M | 19 | N | | 18 | 21 | S3SW1-NO | 25 | Y | | | 28 |
| A 229 | 3 | | J12-C | 19 | N | | 18 | 19 | E36 | 25 | N | | | |
| A 230 | 3 | | J12-B | 19 | N | | 18 | 19 | E35 | 25 | N | | | |
| A 231 | 1 | | | | | | | | | | | | 8 9 | |
| | | | | | | | A 11 | | | | | | A 10 | |
| A 231B | 4 | | E47 | 25 | N | | 14 13 | 48 | SHLD A231 | 25 | N | | | |
| A 231L | | | J12-R | 19 | N | | 18 | 19 | S6SW2-NC | 25 | Y | | | 31 |

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| CONDUCTOR INDIVIDUAL LENGTH | | | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | FROM TERMINATION SPEC. 1 | | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | TO TERMINATION SPEC 1 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2 | CIRCUIT POINT | 2 | TIN | 2 | ITEM NO. | NO. | CIRCUIT POINT | 2 | TIN | 2 | ITEM NO. | NO. |
| A 231R | | | J12-P | 19 | N | | 18 | 19 | S6SW1-NC | 25 | Y | | | 31 |
| A 232 | 1 | | | | | | | | | | | | 8 9 | |
| | | | | | | | A 11 | | | | | | A 10 | |
| A 232B | 4 | | E45 | 25 | N | | | 48 | SHLD A232 | 25 | N | | | |
| A 232L | | | J12-N | 19 | N | | | 19 | S7- 6B | 25 | Y | | | 23 |
| A 232R | | | J12-M | 19 | N | | | 19 | S7- 6A | 25 | Y | | | 23 |
| A 233 | 3 | | J13-C | 19 | N | | 18 | 17 | E36 | 25 | N | | | |
| A 234 | 3 | | J13-B | 19 | N | | 18 | 17 | E35 | 25 | N | | | |
| A 235 | 2 | | | | | | 12 | | | | | | 6 7 11 | |
| A 235B | 4 | | E46 | 25 | N | | 14 13 | 48 | SHLD A235 | 25 | N | | | |
| A 235W | | | J13-E | 19 | N | | 18 | 17 | G2- 3 | 25 | Y | | | 41 |
| A 236 | 1 | | | | | | | | | | | | 8 9 | |
| | | | | | | | A 11 | | | | | | A 10 | |
| A 236B | 4 | | E46 | 25 | N | | | 48 | SHLD A236 | 25 | N | | | |
| A 236L | | | J13-F. | 19 | N | | 18 | 17 | G2- 4 | 25 | Y | | | 41 |
| A 236R | | | J13-S | 19 | N | | 18 | 17 | G2- 2 | 25 | Y | | | 41 |
| A 237 | 2 | | | | | | 12 | | | | | | 6 7 11 | |
| A 237B | 4 | | E46 | 25 | N | | | 48 | SHLD A237 | 25 | N | | | |

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| CONDUCTOR INDIVIDUAL LENGTH | | | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | FROM TERMINATION SPEC. 1 | | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | TO TERMINATION SPEC 1 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2 | CIRCUIT POINT | 2 | TIN | 2 | ITEM NO. | NO. | CIRCUIT POINT | 2 | TIN | 2 | ITEM NO. | NO. |
| A 237W | | | J13-H | 19 | N | | 18 | 17 | G1- 3 | 25 | Y | | | 36 |
| A 238 | 1 | | | | | | | | | | | | 8 9 | |
| | | | | | | | A 11 | | | | | | A 10 | |
| A 238B | 4 | | E46 | 25 | N | | | 48 | SHLD A238 | 25 | N | | | |
| A 238L | | | J13-J | 19 | N | | 18 | 17 | G1- 4 | 25 | Y | | | 36 |
| A 238R | | | J13-U | 19 | N | | 18 | 17 | G1- 2 | 25 | Y | | | 36 |
| A 239 | 1 | | | | | | | | | | | | 8 9 | |
| | | | | | | | A 11 | | | | | | A 10 | |
| A 239B | 4 | | E45 | 25 | N | | 14 13 | 48 | SHLD A239 | 25 | N | | | |
| A 239L | | | J13-N | 19 | N | | 18 | 17 | S7- 5B | 25 | Y | | | 23 |
| A 239R | | | J13-M | 19 | N | | 18 | 17 | S7- 5A | 25 | Y | | | 23 |
| A 240 | 1 | | | | | | | | | | | | 8 9 | |
| | | | | | | | A 11 | | | | | | A 10 | |
| A 240B | 4 | | E45 | 25 | N | | | 48 | SHLD A240 | 25 | N | | | |
| A 240L | | | J13-R | 19 | N | | 18 | 17 | S7- 3B | 25 | Y | | | 23 |
| A 240R | | | J13-P | 19 | N | | 18 | 17 | S7- 3A | 25 | Y | | | 23 |
| A 241 | 1 | | | | | | 8 9 | | | | | | | |
| | | | | | | | A 10 | | | | | | A 11 | |

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| CONDUCTOR INDIVIDUAL LENGTH | | | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | FROM TERMINATION SPEC. 1 | | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET | | | | TO TERMINATION SPEC 1 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2 | CIRCUIT POINT | 2 | TIN | 2 | ITEM NO. | NO. | CIRCUIT POINT | 2 | TIN | 2 | ITEM NO. | NO. |
| A 241A | 4 | | SHLD A241 | 25 | N | | | | E31 | 25 | N | | 14 13 | 45 |
| A 241L | | | P1-16 | 19 | N | | 19 | 46 | S8- 2B | 25 | Y | | | 22 |
| A 241R | | | P1-12 | 19 | N | | 19 | 46 | S8- 2A | 25 | Y | | | 22 |
| A 242 | 1 | | | | | | 8 9 | | | | | | | |
| | | | | | | | A 10 | | | | | | A 11 | |
| A 242A | 4 | | SHLD A242 | 25 | N | | | | E31 | 25 | N | | - | 45 |
| A 242L | | | P1-16 | 19 | N | | | 46 | P10-56 | 19 | N | | 18 | 7 |
| A 242R | | | P1-12 | 19 | N | | | 46 | P10-58 | 19 | N | | 18 | 7 |
| A 243 | 1 | | | | | | 8 9 | | | | | | | |
| | | | | | | | A 10 | | | | | | A 11 | |
| A 243A | 4 | | SHLD A243 | 25 | N | | | | E31 | 25 | N | | | 45 |
| A 243L | | | P1-28 | 19 | N | | 18 | 46 | P10-55 | 19 | N | | 18 | 7 |
| A 243R | | | P1-22 | 19 | N | | 18 | 46 | P10-57 | 19 | N | | 18 | 7 |
| A 244 | 3 | | P1-26 | 19 | N | | 18 | 46 | P10-62 | 19 | N | | 18 | 7 |
| A 245 | 3 | | P1-32 | 19 | N | | 18 | 46 | P10-61 | 19 | N | | 18 | 7 |
| A 246 | 1 | | | | | | 8 9 | | | | | | | |
| | | | | | | | A 10 | | | | | | A 11 | |
| A 246A | 4 | | SHLD A246 | 25 | N | | | | E32 | 25 | N | | 14 13 | 44 |

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| CONDUCTOR INDIVIDUAL LENGTH | | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 246L | | | P2-16 | 19 | N | 19 | 47 | S8- 3B | 25 | Y | | 22 |
| A 246R | | | P2-12 | 19 | N | 19 | 47 | S8- 3A | 25 | Y | | 22 |
| A 247 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 247A | 4 | | SHLD A247 | 25 | N | | | E32 | 25 | N | | 44 |
| A 247L | | | P2-16 | 19 | N | | 47 | P10-45 | 19 | N | 18 | 7 |
| A 247R | | | P2-12 | 19 | N | | 47 | P10-47 | 19 | N | 18 | 7 |
| A 248 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 248A | 4 | | SHLD A248 | 25 | N | | | E32 | 25 | N | | 44 |
| A 248L | | | P2-28 | 19 | N | 18 | 47 | P10-44 | 19 | N | 18 | 7 |
| A 248R | | | P2-22 | 19 | N | 18 | 47 | P10-46 | 19 | N | 18 | 7 |
| A 249 | 3 | | P2-26 | 19 | N | 18 | 47 | P10-51 | 19 | N | 18 | 7 |
| A 250 | 3 | | P2-32 | 19 | N | 18 | 47 | P10-50 | 19 | N | 18 | 7 |
| A 251 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 251A | 4 | | SHLD A251 | 25 | N | | | E33 | 25 | N | 14 13 | 43 |
| A 251L | | | P3-16 | 19 | N | 19 | 49 | S8- 4B | 25 | Y | | 22 |

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| CONDUCTOR INDIVIDUAL LENGTH | | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 251R | | | P3-12 | 19 | N | 19 | 49 | S8- 4A | 25 | Y | | 22 |
| A 252 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 252A | 4 | | SHLD A252 | 25 | N | | | E33 | 25 | N | | 43 |
| A 252L | | | P3-16 | 19 | N | | 49 | P10-34 | 19 | N | 18 | 7 |
| A 252R | | | P3-12 | 19 | N | | 49 | P10-36 | 19 | N | 18 | 7 |
| A 253 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 253A | 4 | | SHLD A253 | 25 | N | | | E33 | 25 | N | | 43 |
| A 253L | | | P3-28 | 19 | N | 18 | 49 | P10-33 | 19 | N | 18 | 7 |
| A 253R | | | P3-22 | 19 | N | 18 | 49 | P10-35 | 19 | N | 18 | 7 |
| A 254 | 3 | | P3-26 | 19 | N | 18 | 49 | P10-40 | 19 | N | 18 | 7 |
| A 255 | 3 | | P3-32 | 19 | N | 18 | 49 | P10-39 | 19 | N | 18 | 7 |
| A 256 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 256A | 4 | | SHLD A256 | 25 | N | | | E34 | 25 | N | 14 13 | 42 |
| A 256L | | | P4-16 | 19 | N | 19 | 50 | S8- 5B | 25 | Y | | 22 |
| A 256R | | | P4-12 | 19 | N | 19 | 50 | S8- 5A | 25 | Y | | 22 |

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| CONDUCTOR INDIVIDUAL LENGTH | | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 257 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 257A | 4 | | SHLD A257 | 25 | N | | | E34 | 25 | N | | 42 |
| A 257L | | | P4-16 | 19 | N | | 50 | P10-23 | 19 | N | 18 | 7 |
| A 257R | | | P4-12 | 19 | N | | 50 | P10-25 | 19 | N | 18 | 7 |
| A 258 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 258A | 4 | | SHLD A258 | 25 | N | | | E34 | 25 | N | | 42 |
| A 258L | | | P4-28 | 19 | N | 18 | 50 | P10-22 | 19 | N | 18 | 7 |
| A 258R | | | P4-22 | 19 | N | 18 | 50 | P10-24 | 19 | N | 18 | 7 |
| A 259 | 3 | | P4-26 | 19 | N | 18 | 50 | P10-28 | 19 | N | 18 | 7 |
| A 260 | 3 | | P4-32 | 19 | N | 18 | 50 | P10-29 | 19 | N | 18 | 7 |
| A 261 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 261A | 4 | | SHLD A261 | 25 | N | | | E31 | 25 | N | | 45 |
| A 261L | | | P5-16 | 19 | N | 19 | 37 | S8- 6B | 25 | Y | | 22 |
| A 261R | | | P5-12 | 19 | N | 19 | 37 | S8- 6A | 25 | Y | | 22 |
| A 262 | 1 | | | | | 8 9 | | | | | | |

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| CONDUCTOR INDIVIDUAL LENGTH | | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | 2 | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TERMINATION SPEC 1 ITEM NO. | NO. |
| | | | | | | A 10 | | | | | A 11 | |
| A 262A | 4 | | SHLD A262 | 25 | N | | | E31 | 25 | N | | 45 |
| A 262L | | | P5-16 | 19 | N | | 37 | P9-46 | 19 | N | 18 | 9 |
| A 262R | | | P5-12 | 19 | N | | 37 | P9-48 | 19 | N | 18 | 9 |
| A 263 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 263A | 4 | | SHLD A263 | 25 | N | | | E31 | 25 | N | | 45 |
| A 263L | | | P5-28 | 19 | N | 18 | 37 | P9-45 | 19 | N | 18 | 9 |
| A 263R | | | P5-22 | 19 | N | 18 | 37 | P9-47 | 19 | N | 18 | 9 |
| A 264 | 3 | | P5-26 | 19 | N | 18 | 37 | P9-41 | 19 | N | 18 | 9 |
| A 265 | 3 | | P5-32 | 19 | N | 18 | 37 | P9-40 | 19 | N | 18 | 9 |
| A 266 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 266A | 4 | | SHLD A266 | 25 | N | | | E32 | 25 | N | | 44 |
| A 266L | | | P6-16 | 19 | N | 19 | 38 | S8- 7B | 25 | Y | | 22 |
| A 266R | | | P6-12 | 19 | N | 19 | 38 | S8- 7A | 25 | Y | | 22 |
| A 267 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |

1> THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR INDIVIDUAL LENGTH | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 267A | 4 | SHLD A267 | 25 | N | | | E32 | 25 | N | | 44 |
| A 267L | | P6-16 | 19 | N | | 38 | P9-35 | 19 | N | 18 | 9 |
| A 267R | | P6-12 | 19 | N | | 38 | P9-37 | 19 | N | 18 | 9 |
| A 268 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 268A | 4 | SHLD A268 | 25 | N | | | E32 | 25 | N | | 44 |
| A 268L | | P6-28 | 19 | N | 18 | 38 | P9-34 | 19 | N | 18 | 9 |
| A 268R | | P6-22 | 19 | N | 18 | 38 | P9-36 | 19 | N | 18 | 9 |
| A 269 | 3 | P6-26 | 19 | N | 18 | 38 | P9-30 | 19 | N | 18 | 9 |
| A 270 | 3 | P6-32 | 19 | N | 18 | 38 | P9-29 | 19 | N | 18 | 9 |
| A 271 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 271A | 4 | SHLD A271 | 25 | N | | | E33 | 25 | N | | 43 |
| A 271L | | P7-16 | 19 | N | 19 | 39 | S8- 8B | 25 | Y | | 22 |
| A 271R | | P7-12 | 19 | N | 19 | 39 | S8- 8A | 25 | Y | | 22 |
| A 272 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 272A | 4 | SHLD A272 | 25 | N | | | E33 | 25 | N | | 43 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR INDIVIDUAL LENGTH | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 272L | | P7-16 | 19 | N | | 39 | P9-24 | 19 | N | 18 | 9 |
| A 272R | | P7-12 | 19 | N | | 39 | P9-26 | 19 | N | 18 | 9 |
| A 273 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 273A | 4 | SHLD A273 | 25 | N | | | E33 | 25 | N | | 43 |
| A 273L | | P7-28 | 19 | N | 18 | 39 | P9-23 | 19 | N | 18 | 9 |
| A 273R | | P7-22 | 19 | N | 18 | 39 | P9-25 | 19 | N | 18 | 9 |
| A 274 | 3 | P7-32 | 19 | N | 18 | 39 | P9-19 | 19 | N | 18 | 9 |
| A 275 | 3 | P7-26 | 19 | N | 18 | 39 | P9-18 | 19 | N | 18 | 9 |
| A 276 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 276A | 4 | SHLD A276 | 25 | N | | | E34 | 25 | N | | 42 |
| A 276L | | P8-16 | 19 | N | 19 | 40 | S8- 9B | 25 | Y | | 22 |
| A 276R | | P8-12 | 19 | N | 19 | 40 | S8- 9A | 25 | Y | | 22 |
| A 277 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 277A | 4 | SHLD A277 | 25 | N | | | E34 | 25 | N | | 42 |
| A 277L | | P8-16 | 19 | N | | 40 | P9-13 | 19 | N | 18 | 9 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR INDIVIDUAL LENGTH | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 277R | | P8-12 | 19 | N | | 40 | P9-15 | 19 | N | 18 | 9 |
| A 278 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 278A | 4 | SHLD A278 | 25 | N | | | E34 | 25 | N | | 42 |
| A 278L | | P8-28 | 19 | N | 18 | 40 | P9-12 | 19 | N | 18 | 9 |
| A 278R | | P8-22 | 19 | N | 18 | 40 | P9-14 | 19 | N | 18 | 9 |
| A 279 | 3 | P8-26 | 19 | N | 18 | 40 | P9- 6 | 19 | N | 18 | 9 |
| A 280 | 3 | P8-32 | 19 | N | 18 | 40 | P9- 7 | 19 | N | 18 | 9 |
| A 281 | 2 | | | | 6 7 11 | | | | | 12 | |
| A 281A | 4 | SHLD A281 | 25 | N | | | E48 | 25 | N | | 48 |
| A 281W | | P9- 1 | 19 | N | 18 | 9 | S6SW2-NC | 25 | Y | | 31 |
| A 282 | 2 | | | | | | | | | | |
| A 282A | 4 | SHLD A282 | 25 | N | | | E48 | 25 | N | | 48 |
| A 282W | | P9- 2 | 19 | N | 18 | 9 | S3SW2-C | 25 | Y | | 28 |
| A 283 | 1 | | | | 8 9 | | | | | | |
| | | | | | A 10 | | | | | A 11 | |
| A 283A | 4 | SHLD A283 | 25 | N | | | E48 | 25 | N | | 48 |
| A 283L | | P9- 3 | 19 | N | | 9 | G2- 5 | 25 | Y | | 41 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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GCF WIRE HARNESS A E 1900097

| CONDUCTOR INDIVIDUAL LENGTH | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC. 1 ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | T I N | TERMINATION SPEC 1 ITEM NO. | NO. |
| A 283R | | P9- 4 | 19 | N | | 9 | G2- 1 | 25 | Y | | 41 |
| A 284 | 2 | | | | 6 7 11 | | | | | 12 | |
| A 284A | 4 | SHLD A284 | 25 | N | | | E48 | 25 | N | | 48 |
| A 284W | | P9- 5 | 19 | N | 18 | 9 | S3SW1-C | 25 | Y | | 28 |
| A 285 | 3 | S1SW1-C | 25 | Y | | 24 | S1SW2-C | 25 | Y | | 24 |
| A 286 | 3 | S1SW2-NC | 25 | Y | | 24 | XDS1-C | 25 | Y | | 25 |
| A 287 | 3 | S1SW2-NO | 25 | Y | | 24 | XDS1-A | 25 | Y | | 25 |
| A 288 | 3 | S2SW1-C | 25 | Y | | 26 | S2SW2-C | 25 | Y | | 26 |
| A 289 | 3 | S2SW2-NC | 25 | Y | | 26 | XDS2-C | 25 | Y | | 27 |
| A 290 | 3 | S2SW2-NO | 25 | Y | | 26 | XDS2-A | 25 | Y | | 27 |
| A 291 | 3 | S3SW3-NO | 25 | Y | | 28 | XDS3-C ✓ | 25 | Y | | 29 |
| A 292 | 3 | S3SW3-NC | 25 | Y | | 28 | XDS3-A ✓ | 25 | Y | | 29 |
| A 293 | 3 | S4SW1-C | 25 | Y | | 35 | S4SW2-C | 25 | Y | | 35 |
| A 294 | 3 | S4SW2-NC | 25 | Y | | 35 | XDS4-C | 25 | Y | | 34 |
| A 295 | 3 | S4SW2-NO | 25 | Y | | 35 | XDS4-A | 25 | Y | | 34 |
| A 296 | 3 | S5SW1-C | 25 | Y | | 33 | S5SW2-C | 25 | Y | | 33 |
| A 297 | 3 | S5SW2-NC | 25 | Y | | 33 | XDS5-C | 25 | Y | | 32 |
| A 298 | 3 | S5SW2-NO | 25 | Y | | 33 | XDS5-A | 25 | Y | | 32 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER
2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

MANNED SPACECRAFT CENTER HOUSTON, TEXAS
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| CONDUCTOR | | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2> | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2> | T I N | TERMINATION SPEC. 1> ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2> | T I N | TERMINATION SPEC 1> ITEM NO. | NO. |
| A 299 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 299A | 4 | | SHLD A299 | 25 | N | | | E47 | 25 | N | | 48 |
| A 299L | | | S6SW2-C | 25 | Y | | 31 | G1- 5 | 25 | Y | | 36 |
| A 299R | | | S6SW1-C | 25 | Y | | 31 | G1- 1 | 25 | Y | | 36 |
| A 300 | 3 | | S6SW3-NC | 25 | Y | | 31 | XDS6-C | 25 | Y | 21 | 30 |
| A 301 | 3 | | S6SW3-NO | 25 | Y | | 31 | XDS6-A | 25 | Y | 21 | 30 |
| A 302 | 3 | | S6SW1-NC | 25 | Y | | 31 | S3SW1-NC | 25 | Y | | 28 |
| A 303 | 3 | | S6SW1-NO | 25 | Y | | 31 | S3SW2-NC | 25 | Y | | 28 |
| A 304 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 304A | 4 | | SHLD A304 | 25 | N | | | E45 | 25 | N | | 48 |
| A 304L | | | S7-11B | 25 | Y | | 23 | T2- 3 | 25 | Y | 21 | 18 |
| A 304R | | | S7-11A | 25 | Y | | 23 | T2- 1 | 25 | Y | 21 | 18 |
| A 305 | 1 | | | | | 8 9 | | | | | | |
| | | | | | | A 10 | | | | | A 11 | |
| A 305A | 4 | | SHLD A305 | 25 | N | | | E45 | 25 | N | | 48 |
| A 305L | | | S8-11B | 25 | Y | | 22 | T1- 3 | 25 | Y | 21 | 20 |

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2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR | | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2> | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2> | T I N | TERMINATION SPEC. 1> ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2> | T I N | TERMINATION SPEC 1> ITEM NO. | NO. |
| A 305R | | | S8-11A | 25 | Y | | 22 | T1- 1 | 25 | Y | 21 | 20 |
| A 306 | 3 | | XDS1-A | 25 | Y | 21 | 25 | XDS1-B | 25 | Y | 21 | 25 |
| A 307 | 3 | | XDS1-C | 25 | Y | 21 | 25 | XDS1-D | 25 | Y | 21 | 25 |
| A 308 | 3 | | XDS2-A | 25 | Y | 21 | 27 | XDS2-B | 25 | Y | 21 | 27 |
| A 309 | 3 | | XDS2-C | 25 | Y | 21 | 27 | XDS2-D | 25 | Y | 21 | 27 |
| A 310 | 3 | | XDS3-A | 25 | Y | 21 | 29 | XDS3-B | 25 | Y | 21 | 29 |
| A 311 | 3 | | XDS3-C | 25 | Y | 21 | 29 | XDS3-D | 25 | Y | 21 | 29 |
| A 312 | 3 | | XDS4-A | 25 | Y | 21 | 34 | XDS4-B | 25 | Y | 21 | 34 |
| A 313 | 3 | | XDS4-C | 25 | Y | 21 | 34 | XDS4-D | 25 | Y | 21 | 34 |
| A 314 | 3 | | XDS5-A | 25 | Y | 21 | 32 | XDS5-B | 25 | Y | 21 | 32 |
| A 315 | 3 | | XDS5-C | 25 | Y | 21 | 32 | XDS5-D | 25 | Y | 21 | 32 |
| A 316 | 3 | | XDS6-A | 25 | Y | 21 | 30 | XDS6-B | 25 | Y | 21 | 30 |
| A 317 | 3 | | XDS6-C | 25 | Y | 21 | 30 | XDS6-D | 25 | Y | 21 | 30 |
| A 318 | 4 | | E1 | 25 | Y | | | G2- 6 | 25 | Y | | 41 |
| A 319 | 4 | | G2- 6 | 25 | Y | | 41 | G1- 6 | 25 | Y | | 36 |
| A 320 | 4 | | E2 | 25 | N | | | E38 | 25 | N | 14 13 | |
| A 321 | 4 | | E3 | 25 | N | | | E38 | 25 | N | | |
| A 322 | 4 | | E4 | 25 | N | | | E38 | 25 | N | | |

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| CONDUCTOR | | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2> | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2> | T I N | TERMINATION SPEC. 1> ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2> | T I N | TERMINATION SPEC 1> ITEM NO. | NO. |
| A 323 | 4 | | E5 | 25 | N | | | E38 | 25 | N | | |
| A 324 | 4 | | E6 | 25 | N | | | E38 | 25 | N | | |
| A 325 | 4 | | E7 | 25 | N | | | E38 | 25 | N | | |
| A 326 | 4 | | E8 | 25 | N | | | E39 | 25 | N | 14 13 | |
| A 327 | 4 | | E9 | 25 | N | | | E39 | 25 | N | | |
| A 328 | 4 | | E10 | 25 | N | | | E39 | 25 | N | | |
| A 329 | 4 | | E11 | 25 | N | | | E39 | 25 | N | | |
| A 330 | 4 | | E12 | 25 | N | | | E39 | 25 | N | | |
| A 331 | 4 | | E13 | 25 | N | | | E40 | 25 | N | 20 12 | |
| A 332 | 4 | | E14 | 25 | N | | | E40 | 25 | N | | |
| A 333 | 4 | | E15 | 25 | N | | | E40 | 25 | N | | |
| A 334 | 4 | | E16 | 25 | N | | | E40 | 25 | N | | |
| A 335 | 4 | | E17 | 25 | N | | | E41 | 25 | N | 20 12 | |
| A 336 | 4 | | E18 | 25 | N | | | E41 | 25 | N | | |
| A 337 | 4 | | E19 | 25 | N | | | E41 | 25 | N | | |
| A 338 | 4 | | E20 | 25 | N | | | E41 | 25 | N | | |
| A 339 | 4 | | E21 | 25 | N | | | E42 | 25 | N | 14 13 | |
| A 340 | 4 | | E22 | 25 | N | | | E42 | 25 | N | | |

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2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR | | | FROM | | | | | TO | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUMBER | ITEM NO. | INDIVIDUAL LENGTH 2> | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2> | T I N | TERMINATION SPEC. 1> ITEM NO. | NO. | CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2> | T I N | TERMINATION SPEC 1> ITEM NO. | NO. |
| A 341 | 4 | | E23 | 25 | N | | | E42 | 25 | N | | |
| A 342 | 4 | | E24 | 25 | N | | | E42 | 25 | N | | |
| A 343 | 4 | | E25 | 25 | N | | | E42 | 25 | N | | |
| A 344 | 4 | | E26 | 25 | N | | | E43 | 25 | N | 14 13 | |
| A 345 | 4 | | E27 | 25 | N | | | E43 | 25 | N | | |
| A 346 | 4 | | E28 | 25 | N | | | E43 | 25 | N | | |
| A 347 | 4 | | E29 | 25 | N | | | E43 | 25 | N | | |
| A 348 | 4 | | E30 | 25 | N | | | E43 | 25 | N | | |
| A 349 | 4 | | E31 | 25 | N | | 45 | E44 | 25 | N | 20 12 | 52 |
| A 350 | 4 | | E32 | 25 | N | | 44 | E44 | 25 | N | | 52 |
| A 351 | 4 | | E33 | 25 | N | | 43 | E44 | 25 | N | | 52 |
| A 352 | 4 | | E34 | 25 | N | | 42 | E44 | 25 | N | | 52 |
| A 353 | 4 | | P10-10 | 19 | N | 18 | 7 | E48 | 25 | N | | |
| A 354 | 4 | | E38 | 25 | N | | | E50 | 25 | N | 14 13 | |
| A 355 | 4 | | E39 | 25 | N | | | E50 | 25 | N | | |
| A 356 | 4 | | E40 | 25 | N | | | E50 | 25 | N | | |
| A 357 | 4 | | E41 | 25 | N | | | E50 | 25 | N | | |
| A 358 | 4 | | E42 | 25 | N | | | E50 | 25 | N | | |

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2> DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | 2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | FROM TERMINATION SPEC. 1 ITEM NO. | FROM NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TO TERMINATION SPEC 1 ITEM NO. | TO NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 359 | 4 | | E43 | 25 | N | | | E50 | 25 | N | | |
| A 360 | 4 | | E44 | 25 | N | | 52 | E49 | 25 | N | 20 12 | 43 |
| A 361 | 4 | | E45 | 25 | N | | 48 | E49 | 25 | N | | 43 |
| A 362 | 4 | | E46 | 25 | N | | 48 | E49 | 25 | N | | 43 |
| A 363 | 4 | | E47 | 25 | N | | 48 | E49 | 25 | N | | 43 |
| A 364 | 4 | | E48 | 25 | N | | | E51 | 25 | N | | |
| A 365 | 4 | | E49 | 25 | N | | 43 | E51 | 25 | N | | |
| A 366 | 4 | | E50 | 25 | N | | | E51 | 25 | N | | |
| A 367 | 4 | | P1-34 | 19 | N | 18 | 46 | E52 | 25 | N | 14 13 | 43 |
| A 368 | 4 | | P2-34 | 19 | N | | 47 | E52 | 25 | N | | 43 |
| A 369 | 4 | | P3-34 | 19 | N | | 49 | E52 | 25 | N | | 43 |
| A 370 | 4 | | P5-34 | 19 | N | | 37 | E52 | 25 | N | | 43 |
| A 371 | 4 | | P6-34 | 19 | N | | 38 | E52 | 25 | N | | 43 |
| A 372 | 4 | | P7-34 | 19 | N | | 39 | E52 | 25 | N | | 43 |
| A 373 | 4 | | P8-34 | 19 | N | | 40 | E52 | 25 | N | | 43 |
| A 374 | 4 | | P4-34 | 19 | N | | 50 | E53 | 25 | N | 14 13 | 43 |
| A 375 | 4 | | S1SW1-C | 25 | Y | | 24 | E53 | 25 | N | | 43 |
| A 376 | 4 | | S2SW1-C | 25 | Y | | 26 | E53 | 25 | N | | 43 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

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| CONDUCTOR NUMBER | INDIVIDUAL LENGTH ITEM NO. | 2 | FROM CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | FROM TERMINATION SPEC. 1 ITEM NO. | FROM NO. | TO CUT WIRE OR SHIELD STRIP WIRE OR JACKET CIRCUIT POINT | 2 | TIN | TO TERMINATION SPEC 1 ITEM NO. | TO NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 377 | 4 | | S3SW3-C | 25 | Y | | 28 | E53 | 25 | N | | 43 |
| A 378 | 4 | | S4SW1-C | 25 | Y | | 35 | E53 | 25 | N | | 43 |
| A 379 | 4 | | S5SW1-C | 25 | Y | | 33 | E53 | 25 | N | | 43 |
| A 380 | 4 | | S6SW3-C | 25 | Y | | 31 | E53 | 25 | N | | 43 |
| A 381 | 4 | | P10-66 | 19 | N | 18 | 7 | E54 | 25 | N | 20 12 | 43 |
| A 382 | 4 | | E52 | 25 | N | | 43 | E54 | 25 | N | | 43 |
| A 383 | 4 | | E53 | 25 | N | | 43 | E54 | 25 | N | | 43 |
| A 384 | 4 | | XF1- 1 | 25 | Y | | 51 | E54 | 25 | N | | 43 |
| A 385 | 4 | | P10-65 | 19 | N | 18 | 7 | E55 | 25 | N | | 43 |
| A 386 | 4 | | XDS1-G | 25 | Y | 21 | 25 | E55 | 25 | N | | 43 |
| A 387 | 4 | | XDS2-G | 25 | Y | 21 | 27 | E55 | 25 | N | | 43 |
| A 388 | 4 | | XDS3-G | 25 | Y | 21 | 29 | E55 | 25 | N | | 43 |
| A 389 | 4 | | XDS4-G | 25 | Y | 21 | 34 | E55 | 25 | N | | 43 |
| A 390 | 4 | | XDS5-G | 25 | Y | 21 | 32 | E55 | 25 | N | | 43 |
| A 391 | 4 | | XDS6-6 | 25 | Y | 21 | 30 | E55 | 25 | N | | 43 |
| A 392 | 3 | | J12-E | 19 | N | 18 | 19 | J12-F | 19 | N | 18 | 19 |

1 THE STD CONDUCTOR TERMINATION FIGURES ARE PER

2 DIMENSIONS ARE IN INCHES AND TWO PLACE DECIMALS.

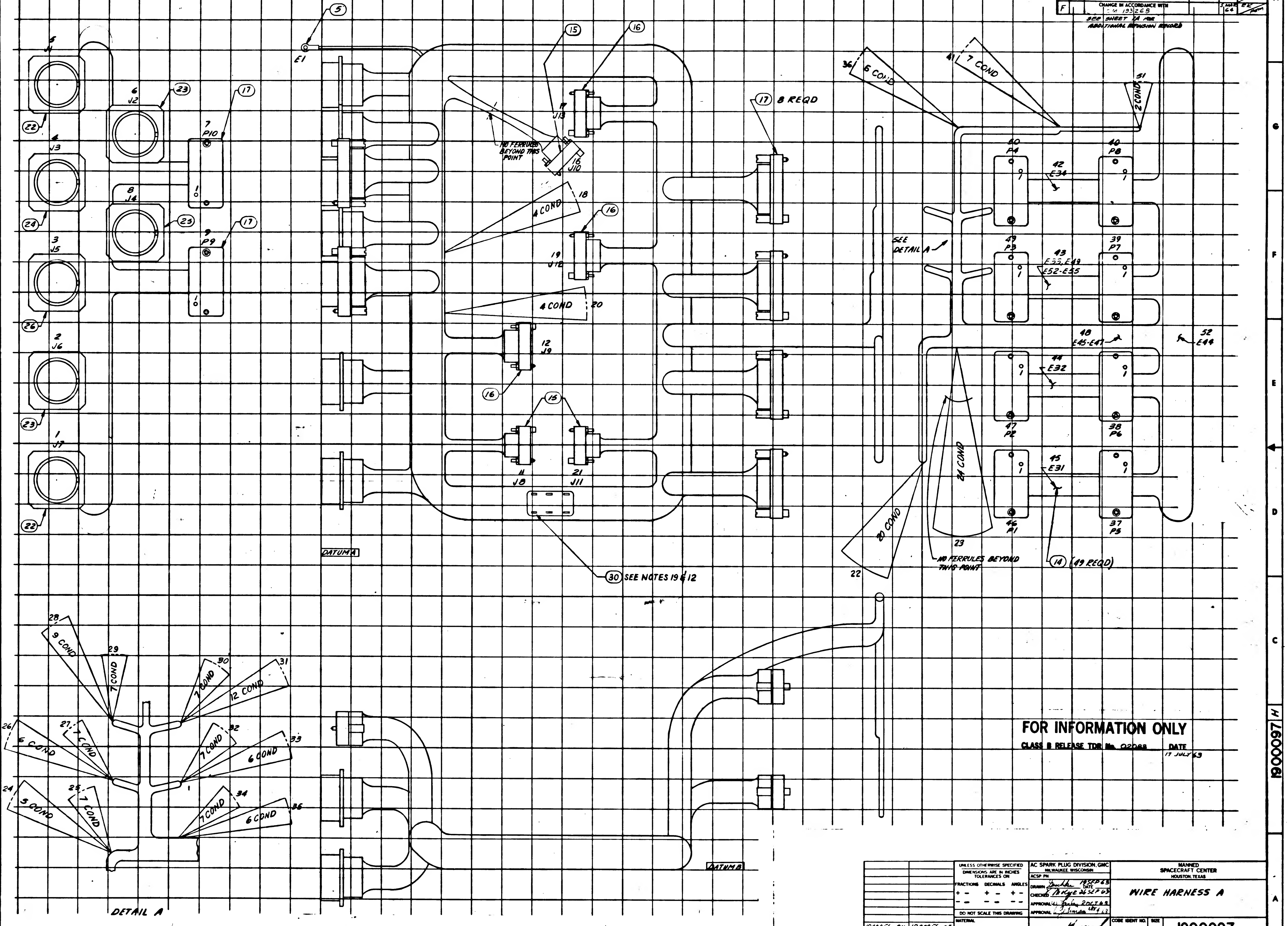
MANNED SPACECRAFT CENTER HOUSTON, TEXAS | SIZE A | 1900097

SCALE - NONE | REV LTR G | SHEET 77 OF 78

MIL 2085 · 4-63 WIR

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
| B | | REPLACES REV. A WITH CHANGE PER MXC-190879<br>REVISED PER TDRR 0414 21 | | 5 OCT 63 | |
| C | | CHANGE IN ACCORDANCE WITH MXC 192288 | | 11 DEC 63 | A.N. |
| F | | CHANGE IN ACCORDANCE WITH CM 193268 | | 5 MAR 64 | |

SEE SHEET 1A FOR ADDITIONAL REVISION RECORD



FOR INFORMATION ONLY
CLASS B RELEASE TDR No. 02083 DATE 17 JULY 63

| | |
|---|---|
| 1900056-011 | 1900056-01 |
| NEXT ASSY | USED ON |
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
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DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN Duchke 19 SEP 63 DATE
CHECKED Y. Mulye 26 SEP 63
APPROVAL W. Farley 2 OCT 63
APPROVAL Tilman OCT 4 63
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRE HARNESS A

CODE IDENT NO. SIZE E 1900097
SCALE FULL SHEET 78 OF 78

1900097 H

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |

PICTURE INCOMPLETE

**FOR INFORMATION ONLY**

CLASS B RELEASE TDR No. 02-083 DATE 17 July 63

| QUANTITY REQUIRED | | | | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | 011 | | | | |
| | | | 1 | | | | SLEEVE, IDENT. |
| | | | 1 | | | | |
| | | | 1 | | | | |
| | | | 1 | | | | |
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| | | | 1 | | | | |
| | | | 1 | | | | |
| | | | 660 | | | 1015818-424 | CONTACT, PIN |
| | | | 3 | | | 1015867-200 | CONNECTOR, RECEP. |
| | | | 3 | | | 1015867-140 | CONNECTOR, RECEP. |
| | | | 10 | | | 1015818-660 | CONNECTOR, PLUG |
| | | | 1 | | | MS3127E24-61PZ | CONNECTOR, RECEP. |
| | | | 1 | | | MS3127E24-61PY | |
| | | | 2 | | | MS3127E24-61PX | |
| | | | 1 | | | MS3127E24-61PW | |
| | | | 2 | | | MS3127E24-61P | |
| | | | 1 | | | 1900097-001 | WIRE |

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900056-011 | 1900004 | |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS + − DECIMALS + − ANGLES + −

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS 9-947

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN L. Sommer DATE 2 JUL 63
CHECKED 2 JUL 63
APPROVAL 2 Jul 63
APPROVAL 10 July 63
NASA APPROVAL 7/17/63
MIT APPROVAL 7/1/63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

WIRE HARNESS "A"
OSCILL. SIGNAL SELECTOR

CODE IDENT NO.
SIZE D
1900097
SCALE
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INCHES
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PHOTOGRAPHIC SCALE ONLY

1900098 A

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
| A | D-8 | (A1) ADDED REQUIREMENTS | D.O. 51568 | 15 MAY 63 | J.J.J. / RWH |

REQUIREMENTS:
PROCUREMENT SPECIFICATION PS-1900098

PICTURE INCOMPLETE

**FOR INFORMATION ONLY**

**CLASS B RELEASE TDR No.** 01949 **DATE** 7/10/63

| QUANTITY REQUIRED | | | | | | LIST OF PARTS AND MATERIALS | |
|---|---|---|---|---|---|---|---|
| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900145-011 | 1900145-011 | 011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN R.R. Tomasi DATE 30 APR 63
CHECKED Wale Kauske 30 APR
APPROVAL J. R. Winberg 30 Apr 63
APPROVAL J. Heinze 8 July 63
NASA APPROVAL Jack Barnard
MIT APPROVAL McKeague 7/10/63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

COOLANT SUPPLY

CODE IDENT NO.
SIZE D
1900098
SCALE
SHEET

INCHES
0 2
PHOTOGRAPHIC SCALE ONLY

Apollo G&N Specification
PS-1900098-A

Class Release
TDRR

## PROCUREMENT SPECIFICATION

## COOLANT SUPPLY

**FOR INFORMATION ONLY**

**CLASS B RELEASE TDR No.** 01941 **DATE** 10 July 1963

Record of Revisions

| Revision Letter | TDRR No. | Pages Revised | Approvals |  | Date |
|---|---|---|---|---|---|
|  |  |  | MIT | NASA |  |
| A |  | 4-8, 11 and 12 retyped. Was 14 pages now 12 pages. MXC-187908 |  |  |  |
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|  |  |  |  |  |  |

This specification consists of page i to iii and 1 to 12 inclusive.

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## COOLANT SUPPLY

The purpose of this document is to establish the manufacturing and test requirements for procurement. The Coolant Supply is intended for use in the ground support equipment of the Apollo Guidance and Navigation program.

Milton B. Trageser 7/10/63
MIT INSTRUMENTATION LABORATORY

Jack Barnard 7/10/63
NASA/MSC APPROVAL

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## PROCUREMENT SPECIFICATION

## COOLANT SUPPLY

### 1. SCOPE

1.1 SCOPE. This specification establishes the requirements for the procurement of a Coolant Supply.

### 2. APPLICABLE DOCUMENTS

2.1 The following documents of the issue in effect on the date of invitation for bids form a part of this specification to the extent specified herein.

SPECIFICATIONS

Military

|  |  |
|---|---|
| MIL-P-116 | Preservation, Methods of |
| MIL-E-9500 | Ethylene Glycol, Technical Uninhibited (Reference Only) |
| MIL-E-17555 | Electronic and Electrical Equipment and Associated Repair Parts, Preparation for Delivery of |
| MIL-W-27076 | Workmanship Standards for Ground Electronic and Associated Equipment |

Apollo G & N

|  |  |
|---|---|
| ND-1002018 | General Specification for Apollo Guidance and Navigation Ground Support Equipment |
| ND-1002019 | Marking |
| ND-1002023 | Procedure for Serialization of Components, Assemblies, etc, for Apollo Guidance Navigation Equipment |
| ND-1015404 | General Specification, Configuration Process and Quality Control Requirements for Suppliers of High Reliability Articles for Use in Spacecraft and Supporting Equipment |

B 8600061 2

REVISIONS

| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
|---|---|---|---|---|---|
| A | D-8 | Ⓐ1 ADDED REQUIREMENTS | D.O 51568 | 15 MAY 63 | RWH |
| B1 | | REPLACED WITH CHANGE BY REV "C" PER TDRR 13850 | | 21 AUG 64 | JWP JJK |

REQUIREMENTS:
PROCUREMENT SPECIFICATION PS-1900098

PICTURE INCOMPLETE

**FOR INFORMATION ONLY**

**CLASS B RELEASE TDR No.** 21944 **DATE** 7/10/63

Ⓑ1 **REPLACED WITH CHANGE BY REV "C"**

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
| QUANTITY REQUIRED | | | | | LIST OF PARTS AND MATERIALS | | |

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900145-011 | 1900145-011 | 011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±

DO NOT SCALE THIS DRAWING

MATERIAL

CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN

ACSP PN

DRAWN R.C. Tamsen DATE 30 APR 63
CHECKED 30 APR
APPROVAL J. R. Winberg 30 Apr 63
APPROVAL
NASA APPROVAL
MIT APPROVAL 7/10/63

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

COOLANT SUPPLY

CODE IDENT NO
SIZE D
1900098
SCALE
SHEET

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. VENDOR ITEM, SEE SPECIFICATION CONTROL DRAWING
3. APPLY ITEM 246 TO ALL PIPE THREADS
4. DRAWINGS FOR REFERENCE:
   1901090 FLOW SCHEMATIC
   1901092 WIRING SCHEMATIC
5. THIS ASSY CONFORMS WITH THE DIMENSIONAL REQUIREMENTS OF DWG NO. MX111138
6. BRAZE PER MIL-B-7883, USING ITEM 255
7. SUPPLY AND SHOW APPROPRIATE DATA ON NAMEPLATE (ITEM 63) AT ASSY
8. IDENTIFY USING DRAWING NUMBER AND REVISION LETTER PER MIL-STD-130
   (A) RUBBER STAMP WITH BLACK INK PER TT-I-558, .125 HIGH CHARACTERS COAT WITH VARNISH PER MIL-V-173
9. FOR TEST PROCEEDURES SEE P.S.1900098, PARAGRAPH 4

| REVISIONS TDRR 2/8-4 | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
| C1 | | REPLACES REV. "B" WITH CHANGE PER TDRR 13850 | 2-66-64 | 21 AUG 64 | JWP |

| C | C | C | C | C | C | C |
|---|---|---|---|---|---|---|
| SHEET 1 | SHEET 2 | SHEET 3 | SHEET 4 | SHEET 5 | SHEET 6 | SHEET 7 |

REVISION STATUS OF SHEETS

Ⓒ1 REPLACES REV"B" WITH CHANGE

| | QUANTITY REQUIRED 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|
| | AR | | 255 | QQ-S-571, TYPE Sn 60 | SOLDER |
| | AR | | 254 | MIL-MP-15280 TYPE II, FORM II | .50 THK INSULATION (ARMAFLEX) 2 SQ FEET TOTAL LENGTH |
| | AR | | 253 | MIL-MP-15280 TYPE II, FORM II | .13 THK INSULATION (ARMAFLEX) 1 SQ FOOT TOTAL LENGTH |
| | AR | | 252 | MIL-MP-15280 TYPE II, FORM I | 1.63 ID, NO.22 TUBING (ARMAFLEX) 2 FEET TOTAL LENGTH |
| | AR | | 251 | MIL-MP-15280 TYPE II, FORM I | .38 ID, NO.22 TUBING (ARMAFLEX) 35 FEET TOTAL LENGTH |
| | AR | | 250 | MIL-MP-15280 TYPE II, FORM I | .63 ID, NO.22 TUBING (ARMAFLEX) 23 FEET TOTAL LENGTH |
| | AR | | 249 | MIL-MP-15280 TYPE II, FORM I | .88 ID, NO.22 TUBING (ARMAFLEX) 12 FEET TOTAL LENGTH |
| | AR | | 248 | MIL-MP-15280 TYPE II, FORM I | 1.13 ID, NO.22 TUBING (ARMAFLEX) 3 FEET TOTAL LENGTH |
| | - | | 247 | 1901091 | WIRING DIAGRAM |
| SEE NOTE 2 | AR | | 246 | 1016198-001 | SEALING COMPOUND (GLYPTAL) |
| | 2 | | 245 | 1016317-006 | ELBOW, STREET, 90° |
| | 1 | | 244 | 1016317-005 | ELBOW, 90° |
| | 8 | | 243 | 1016320-001 | EXTENDED BUSHING |
| | 1 | | 242 | 1016335-001 | RETURN BEND |
| | 4 | | 241 | 1016326-006 | TEE |
| | 8 | | 240 | 1016326-005 | TEE |
| | 3 | | 239 | 1016326-004 | TEE |
| | 2 | | 238 | 1016326-003 | TEE |
| | 9 | | 237 | 1016326-002 | TEE |
| | 4 | | 236 | 1016326-001 | TEE |
| | 1 | | 235 | 1901143-002 | TUBE |
| SEE NOTE 2 | 1 | | 234 | 1016329-001 | ADAPTER |
| | 4 | | 233 | 1901181 | KNOB |
| | 4 | | 232 | 1901180-003 | BUSHING (RATIO DRIVE KNOB) |
| | 1 | | 231 | 1016310-001 | BUSHING |
| | 1 | | 230 | 1016312-001 | UNION |
| | 1 | | 229 | 1016313-001 | UNION |
| | 10 | | 228 | 1016308-001 | HALF UNION COUPLING |
| | 1 | | 227 | 1016314-001 | TEE |
| | 1 | | 226 | MS 28778-2 | PACKING |
| | 1 | | 225 | 1901169 | FITTING, FLOWMETER, CKT 1 |
| SEE NOTE 2 | 5 | | 224 | 1016307-001 | FITTING, COUPLING |
| | 1 | | 223 | 1016325-008 | TERMINAL BLOCK |
| | 12 | | 222 | 1016151-004 | NUT |
| | 10 | | 221 | 1016151-006 | NUT |
| | 3 | | 220 | 1016151-008 | NUT |
| | 66 | | 219 | 1016151-010 | NUT |
| | 4 | | 218 | 1016151-012 | NUT |
| | 1 | | 217 | 1901177-002 | COVER, TERMINAL BOARD |
| | 2 | | 216 | 1901077-002 | METER FLOW RATE INDICATOR, MODIFIED |
| | 1 | | 215 | 1901143-001 | TUBE |
| | 4 | | 214 | 1901160 | SPACER |
| | 1 | | 213 | 1901137-004 | TUBE |
| | 1 | | 212 | 1901137-003 | TUBE |
| | 1 | | 211 | 1901137-002 | TUBE |
| | 2 | | 210 | 1901137-001 | TUBE |
| | 2 | | 209 | 1901136 | TUBE |
| | 1 | | 208 | 1901135 | TUBE |
| | 1 | | 207 | 1901134 | TUBE |
| | 1 | | 206 | 1901142 | TUBE |
| | 1 | | 205 | 1901140 | TUBE |
| | 1 | | 204 | 1901175 | TUBE |
| | 4 | | 203 | 1901133-003 | TUBE |
| | 2 | | 202 | 1901133-002 | TUBE |
| | 4 | | 201 | 1901133-001 | TUBE |
| | 1 | | 200 | 1901132 | TUBE |
| | 1 | | 199 | 1901189 | TUBE |
| | 1 | | 198 | 1901188 | TUBE |
| | 1 | | 197 | 1901187 | TUBE |
| | 1 | | 196 | 1901178 | TUBE |
| | 1 | | 195 | 1901130 | TUBE |
| | 1 | | 194 | 1901139 | TUBE |
| | 1 | | 193 | 1901129 | TUBE |
| | 1 | | 192 | 1901128 | TUBE |
| | 1 | | 191 | 1901127 | TUBE |
| | 1 | | 190 | 1901183-001 | TUBE |
| | 1 | | 189 | 1901126-002 | TUBE |
| | 1 | | 188 | 1901126-001 | TUBE |
| | 1 | | 187 | 1901125 | TUBE |
| | 1 | | 186 | 1901183-003 | TUBE |
| | 1 | | 185 | 1901141 | TUBE |
| | 2 | | 184 | 1901183-002 | TUBE |
| | 4 | | 183 | 1901123 | TUBE |
| | 1 | | 182 | 1901122 | TUBE |
| | 1 | | 181 | 1901121 | TUBE |
| | 1 | | 180 | 1901120 | TUBE |
| | 1 | | 179 | 1901119 | TUBE |
| | 1 | | 178 | 1901118 | TUBE |
| | 1 | | 177 | 1901117 | TUBE |
| | 4 | | 176 | 1901116 | TUBE |
| | 4 | | 175 | 1901115 | TUBE |
| | 4 | | 174 | 1901114 | TUBE |
| | 4 | | 173 | 1901113 | TUBE |
| | | | 172 | | |
| | 8 | | 171 | 1901112 | TUBE |
| | 1 | | 170 | 1901111 | TUBE ASSY, PUMP, CKT 4 |
| | 1 | | 169 | 1901110 | TUBE ASSY, PUMP, CKT 3 |
| | 1 | | 168 | 1901109 | TUBE ASSY, PUMP, CKT 2 |
| | 1 | | 167 | 1901108 | TUBE ASSY, PUMP, CKT 1 |
| | 1 | | 166 | 1901107 | TUBE ASSY, BLEED STATION, CKT 4 |
| | 1 | | 165 | 1901106 | TUBE ASSY, BLEED STATION, CKT 3 |
| | 1 | | 164 | 1901105 | TUBE ASSY, BLEED STATION, CKT 2 |
| | 1 | | 163 | 1901104 | TUBE ASSY, BLEED STATION, CKT 1 |
| | 1 | | 162 | 1901174-002 | TUBE, STRAIGHT |
| | 2 | | 161 | 1901174-001 | TUBE STRAIGHT |
| | 1 | | 160 | 1901101 | TUBE ASSY, GAGE |
| | 1 | | 159 | 1901100 | TUBE ASSY, FLOW SWITCH CKT 4 |
| | 1 | | 158 | 1901099 | TUBE ASSY, FLOW SWITCH CKT 3 |
| | 1 | | 157 | 1901098 | TUBE ASSY, FLOW SWITCH CKT 2 |
| | 1 | | 156 | 1901097 | TUBE ASSY, FLOW SWITCH, CKT 1 |
| | 1 | | 155 | 1901096 | TUBE ASSY, FILTER, CKT 4 |
| | 1 | | 154 | 1901095 | TUBE ASSY, FILTER, CKT 3 |
| | 1 | | 153 | 1901094 | TUBE ASSY, FILTER, CKT 2 |
| SEE NOTE 2 | 1 | | 152 | 1901093 | TUBE ASSY, FILTER, CKT 1 |
| | 1 | | 151 | 1016349 | TRANSFORMER |
| | 1 | | 150 | MIL-S-8372, TYPE J3 | SIGNAL ASSY, EMER CREW WARNING |
| | 4 | | 149 | MS 35489-12 | GROMMET, RUBBER |
| | 4 | | 148 | MS 35338-82 | WASHER, LOCK, SPLIT, MED |
| | 16 | | 147 | MS 35333-71 | WASHER, LOCK, FLAT, INTERNAL TOOTH |
| | 4 | | 146 | MS 21318-14 | SCREW, DRIVE, ROUND HD, TYPE U |
| | 4 | | 145 | MS 20073-04-11 | BOLT, MACH, DRILLED HD |
| | 8 | | 144 | AN 924-4C | NUT, FLARE TUBE, BULKHEAD |
| | 8 | | 143 | AN 924-4B | NUT, FLARE TUBE, BULKHEAD |
| | 4 | | 142 | AN 960C516 | WASHER, FLAT |
| | 16 | | 141 | AN 960C716 | WASHER, FLAT |
| | 1 | | 140 | MS 3102R20-15P | CONNECTOR, RECEPTACLE, ELECTRIC |
| | 1 | | 139 | MS 3122E14-15P | CONNECTOR, RECEPTACLE, ELECTRIC |
| | 1 | | 138 | MS 91528-2K2D | KNOB, CONTROL |
| | 3 | | 137 | MS 25068-23 | SWITCH, TOGGLE |
| | 2 | | 136 | MS 35489-43 | GROMMET, RUBBER |
| | 8 | | 135 | MS 35489-37 | GROMMET, RUBBER |
| | 45 | | 134 | MS 35338-81 | WASHER, LOCK, SPLIT, MED |
| | 6 | | 133 | MS 35338-80 | WASHER, LOCK, SPLIT, MED |
| | 16 | | 132 | MS 35338-79 | WASHER, LOCK, SPLIT, MED |
| | 19 | | 131 | MS 35276-65 | SCR, MACH, DRILLED FILLISTER HD |
| | 8 | | 130 | MS 35276-64 | SCR, MACH, DRILLED FILLISTER HD |
| | 8 | | 129 | MS 35275-64 | SCR, MACH, DRILLED FILLISTER HD |
| | 3 | | 128 | MS 35275-46 | SCR, MACH, DRILLED FILLISTER HD |
| | 4 | | 127 | MS 35275-32 | SCR, MACH, DRILLED FILLISTER HD |
| | 16 | | 126 | MS 35275-26 | SCR, MACH, DRILLED FILLISTER HD |
| | 8 | | 125 | MS 35275-18 | SCR, MACH, DRILLED FILLISTER HD |
| | 4 | | 124 | MS 35275-16 | SCR, MACH, DRILLED FILLISTER HD |
| | 16 | | 123 | MS 35250-78 | SCR, MACH, FLAT HD, 82°, SLOTTED |
| | 19 | | 122 | MS 35250-74 | SCR, MACH, FLAT HD, 82°, SLOTTED |
| | 5 | | 121 | MS 35250-73 | SCR, MACH, FLAT HD, 82°, SLOTTED |
| | 2 | | 120 | MS 35249-53 | SCR, MACH, FLAT HD, 82°, SLOTTED |
| | 2 | | 119 | MS 35249-38 | SCR, MACH, FLAT HD, 82°, SLOTTED |
| | 14 | | 118 | MS 35217-57 | SCR, MACH, PAN HD, CROSS-RECESSED |
| | 4 | | 117 | MS 35216-28 | SCR, MACH, PAN HD, CROSS-RECESSED |
| | 1 | | 116 | MS 21919DG6 | CLAMP, CUSHIONED |
| | 3 | | 115 | MS 21919DG3 | CLAMP, CUSHIONED |
| | 13 | | 114 | MS 20822-6B | ELBOW, FLARE TUBE & PIPE, 90° |
| | 10 | | 113 | MS 20189-6B | SLEEVE, FLARE TUBE |
| | 2 | | 112 | MS 20819-5B | SLEEVE, FLARE TUBE |
| | 6 | | 111 | MS 20819-4B | SLEEVE, FLARE TUBE |
| | 8 | | 110 | MS 20074-03-06 | BOLT, MACH, DRILLED HD |
| | 4 | | 109 | MS 20074-03-05 | BOLT, MACH, DRILLED HD |
| | 4 | | 108 | MS 20074-03-04 | BOLT, MACH, DRILLED HD |
| | 4 | | 107 | MS 20074-05-07 | BOLT, MACH, DRILLED HD |
| | 2 | | 106 | MS 20073-04-05 | BOLT, MACH, DRILLED HD |
| | 16 | | 105 | MS 20073-03-05 | BOLT, MACH, DRILLED HD |
| | 10 | | 104 | MS 20073-03-04 | BOLT, MACH, DRILLED HD |
| | 1 | | 103 | AN 6290-12 | GASKET |
| | 10 | | 102 | AN 960C416 | WASHER, FLAT |
| | 93 | | 101 | AN 960C10 | WASHER, FLAT |
| | 8 | | 100 | AN 960C8 | WASHER, FLAT |
| | 28 | | 99 | AN 960C6 | WASHER, FLAT |
| | 12 | | 98 | AN 960C4 | WASHER, FLAT |
| | 1 | | 97 | AN 823-6B | ELBOW, FLARE TUBE & PIPE, 45° |
| | 6 | | 96 | AN 823-4B | ELBOW, FLARE TUBE & PIPE, 45° |
| | 10 | | 95 | AN 818-6B | NUT, COUPLING |
| | 2 | | 94 | AN 818-5B | NUT, COUPLING |
| | 6 | | 93 | AN 818-4B | NUT, COUPLING |
| | 2 | | 92 | AN 816-6B | NIPPLE, FLARE TUBE & PIPE |
| | 10 | | 91 | AN 816-6-2B | NIPPLE, FLARE TUBE & PIPE |
| | 2 | | 90 | AN 816-5-4B | NIPPLE, FLARE TUBE & PIPE |
| | 2 | | 89 | AN 816-5B | NIPPLE, FLARE TUBE & PIPE |
| | 1 | | 88 | AN 814-12C | PLUG & BLEEDER |
| | 1 | | 87 | 1901086-003 | STRIP, MARKER |
| | 1 | | 86 | 1901083 | CASE ASSY, ELECTRICAL EQUIP. |
| | 3 | | 85 | 1901082-022 | DIAL ASSY, TEMP CONTROL |
| | 1 | | 84 | 1901082-011 | DIAL ASSY, TEMP CONTROL |
| | 1 | | 83 | 1901081 | CONDENSING UNIT, HERMETIC |
| | 1 | | 82 | 1901079 | SOCKET, BULB, SENSING |
| | 1 | | 81 | 1901077-001 | METER, FLOW RATE INDICATOR, MODIFIED |
| | 1 | | 80 | 1901076 | VALVE, RESERVOIR |
| | 2 | | 79 | 1901074-002 | ELBOW, FLARE TO PIPE |
| | 2 | | 78 | 1901074-001 | ELBOW, FLARE TO PIPE |
| | 1 | | 77 | 1901071 | ELBOW ASSY, TANK |
| | 16 | | 76 | 1901069-002 | INSULATOR, MOTOR-PUMP |
| | 4 | | 75 | 1901069-001 | INSULATOR, MOTOR-PUMP |
| | 1 | | 74 | 1901068 | MANIFOLD ASSY, HEATER |
| | 3 | | 73 | 1901062 | MANIFOLD ASSY, HEATER |
| | 1 | | 72 | 1901061 | PLATE, QUICK DISCONNECT |
| | 4 | | 71 | 1901060-021 | MANIFOLD ASSY, TEMP, SENSING |
| | 4 | | 70 | 1901060-011 | MANIFOLD ASSY, TEMP, SENSING |
| | 1 | | 69 | 1901057 | BRACKET, HEAT INTERCHANGER |
| | 1 | | 68 | 1901056 | PLATE, MOUNTING, NAMEPLATE |
| | 1 | | 67 | 1901055 | BRACKET, TRANSFORMER |
| | 16 | | 66 | 1901054 | INSULATOR, REAR |
| | 8 | | 65 | 1901052-002 | INSULATOR, FRONT |
| | 8 | | 64 | 1901052-001 | INSULATOR, FRONT |
| | 1 | | 63 | 1901053 | PLATE, IDENTIFICATION |
| | 1 | | 62 | 1901179 | PLATE, IDENTIFICATION |
| | 2 | | 61 | 1901049 | CLAMP, CHILLER |
| | 1 | | 60 | 1901047 | BRACKET, OIL TANK |
| | 1 | | 59 | 1901046 | COVER, ELECTRICAL BOX |
| | 1 | | 58 | 1901045 | PANEL, REAR |
| | 16 | | 57 | 1901044 | CLAMP, FLOWMETER |
| | 1 | | 56 | 1901176 | HEAT INTERCHANGER ASSY, REFRIGERANT |
| | | | 55 | | |
| | 1 | | 54 | 1901041 | BRACKET, SUPPORT, HOSE |
| | 1 | | 53 | 1901039 | BRACKET, TERMINAL STRIP |
| | 1 | | 52 | 1901037 | INSULATOR, FLOW SWITCH |
| | 1 | | 51 | 1901036 | INSULATOR, THERMOSTAT MANIFOLD |
| | 1 | | 50 | 1901031 | BRACKET, AUDIBLE ALARM |
| | 2 | | 49 | 1901027 | CLAMP, TUBE |
| | 2 | | 48 | 1901026 | CLAMP ASSY, CABLE |
| | 1 | | 47 | 1901025 | CLAMP ASSY, CABLE |
| | 1 | | 46 | 1901024 | PLATE, MOUNTING, INLET & OUTLET |
| | 1 | | 45 | 1901023 | BRACKET, ANGLE |
| | 2 | | 44 | 1901022 | SUPPORT, CHILLER |
| | 1 | | 43 | 1901021 | BRACKET, THERMOSTAT |
| | 1 | | 42 | 1901020 | PLATE, MOUNTING, CHILLER |
| | 1 | | 41 | 1901018 | BRACKET, BLEED VALVE |
| | 1 | | 40 | 1901017 | PANEL, ELECTRICAL CONNECTOR |
| | 1 | | 39 | 1901016 | BRACKET, FLOW SWITCH |
| | 4 | | 38 | 1901013 | MANIFOLD, THERMOSTATIC |
| | 1 | | 37 | 1901012 | FRAME, COOLANT, EQUIPMENT |
| | 1 | | 36 | 1901009 | PANEL, FRONT |
| | 1 | | 35 | 1901007 | CHART, CALIBRATION |
| | 1 | | 34 | 1901006 | TANK, RESERVOIR |
| | 4 | | 33 | 1901004 | FLOW SWITCH ASSY |
| SEE NOTE 2 | 1 | | 32 | 1901003-001 | METER, FLOW RATE INDICATOR, FLOAT TYPE |
| | 1 | | 31 | 1897151 | SWITCH, ROTARY SELECTOR |
| | 1 | | 30 | 1901001-021 | VALVE, TEMP, REGULATING |
| | 3 | | 29 | 1901001-011 | VALVE, TEMP, REGULATING |
| | 4 | | 28 | 1897150 | PUMP, ROTARY, POWER DRIVEN |
| SEE NOTE 2 | 1 | | 27 | 1900893 | PUMP, CENTRIFUGAL |
| | 1 | | 26 | 1900841 | EXCHANGER, HEAT |
| | 6 | | 25 | 1016272 | VALVE, BLEED |
| | 4 | | 24 | 1016271 | HEATER |
| | 1 | | 23 | 1016306-001 | FILTER |
| | 8 | | 22 | 1897162 | SWITCH, THERMOSTATIC |
| | 4 | | 21 | 1016238-002 | COUPLING HALF, QUICK DISCONNECT |
| | 1 | | 20 | 1016180-003 | VALVE-GLOBE, FEMALE TO FEMALE |
| | 8 | | 19 | 1016179 | HOSE ASSY, LOW PRESSURE |
| | 4 | | 18 | 1016178-005 | SWITCH, PRESS ACTUATED |
| | 1 | | 17 | 1016177 | SWITCH ASSY, PUSH BUTTON |
| | 4 | | 16 | 1016148-002 | VALVE, FLOW CONTROL |
| | 4 | | 15 | 1016148-001 | VALVE, FLOW CONTROL |
| | 1 | | 14 | 1016145-001 | VALVE, RELIEF |
| | 1 | | 13 | 1016144-001 | GAGE, LIQUID LEVEL |
| | 4 | | 12 | 1016143 | VALVE, CHECK |
| | 3 | | 11 | 1016142-001 | FILTER, IN LINE |
| | 4 | | 10 | 1016141-001 | VALVE, CHECK |
| | 4 | | 9 | 1016136-003 | GAGE, PRESS. |
| | 9 | | 8 | 1016137-001 | GAGE, TEMP. |
| | 4 | | 7 | 1015869-356 | SWITCH ASSY, LIGHT INDICATOR |
| | 1 | | 6 | 1016136-002 | GAGE, PRESS. |
| | 4 | | 5 | 1016019-005 | COUPLING HALF-QUICK DISC. (FEMALE) |
| | 4 | | 4 | 1015869-538 | SWITCH ASSY, LIGHT INDICATOR |
| | 4 | | 3 | 1015869-355 | SWITCH ASSY, LIGHT INDICATOR |
| | 1 | | 2 | 1015869-163 | SWITCH ASSY, LIGHT INDICATOR |
| | 2 | | 1 | 1015869-162 | SWITCH ASSY, LIGHT INDICATOR |

LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
|---|---|---|
| 1900995-011 | 1900395-011 | -011 |

APPLICATION

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN G. DEMMONS DATE 4/6/63
CHECKED G.D.D. 5-14-63
APPROVAL M.R.G. 4-13-64
APPROVAL L. Gedimon 10/2/63
NASA APPROVAL 11-6-64
MIT APPROVAL

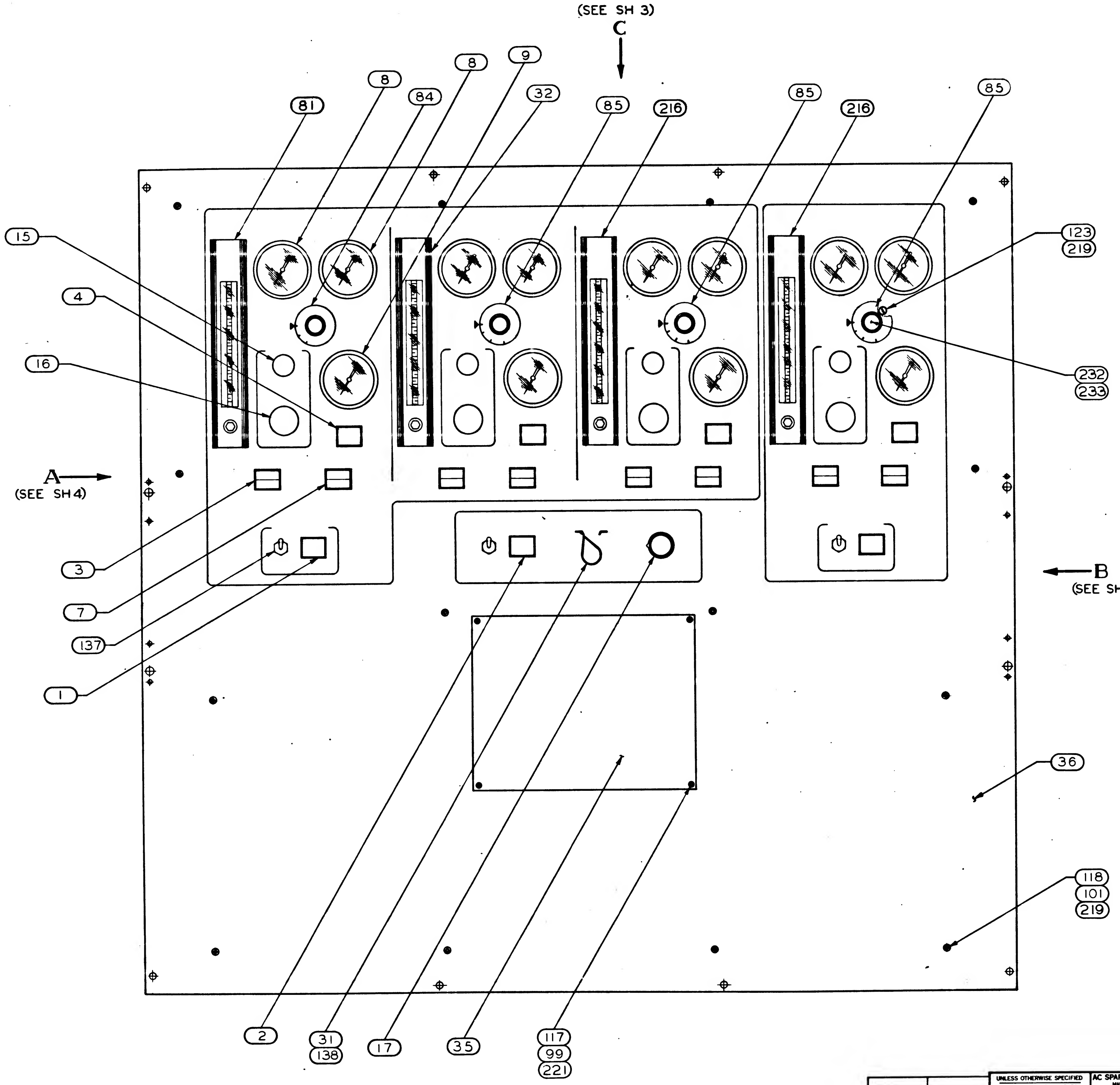
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

COOLANT SUPPLY INTERFACE CONTROL

CODE IDENT NO. SIZE E 1900098
SCALE 1/2 SHEET 1 OF 7

1900098 C

| REVISIONS TDRR 01844 | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
| C1 | | REPLACES REV "B" WITH CHANGE PER TDRR 13850 | 2766-64 | 21 AUG 64 | JWP |



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| | |
|---|---|
| 1900995-011 | 1900995-011 |
| NEXT ASSY | USED ON |
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL ———
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN G. DEMMONS DATE 12/6/63
CHECKED G.D.D. 5-15-64
APPROVAL M.R.G. 4-13-64
APPROVAL
NASA APPROVAL 11-6-64
MIT APPROVAL

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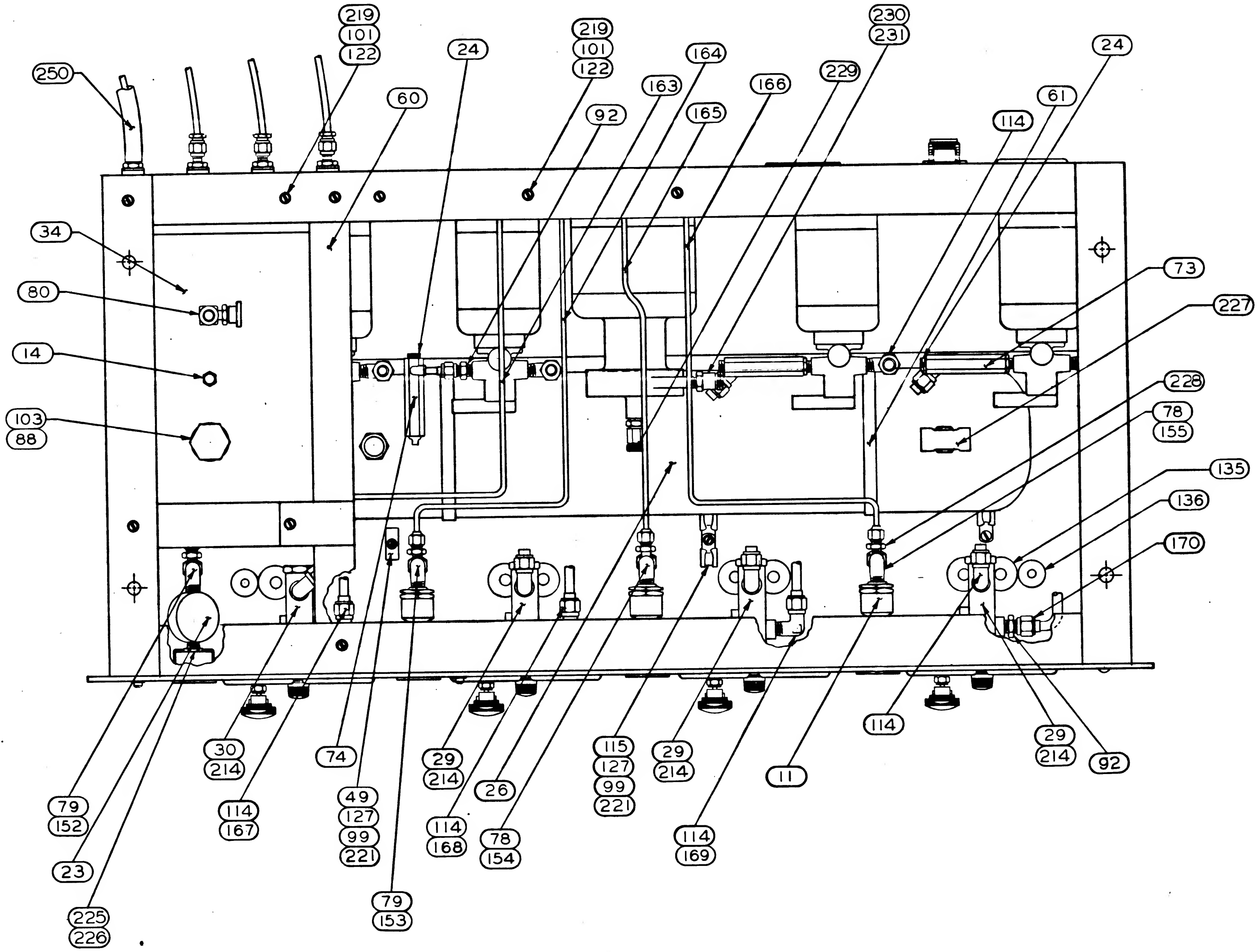
COOLANT SUPPLY
INTERFACE CONTROL

CODE IDENT NO.
SIZE E
1900098
SCALE 1/2
SHEET 2 OF 7

| REVISIONS TDRR 01346 | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD. |
| C | | REPLACES REV. "B" WITH CHANGE PER TDRR 13850 | 27 OCT 64 | 21 AUG 64 | JWT |



VIEW IN DIRECTION C
(SEE SH 2)

Ⓒ THIS SHEET ADDED

| | |
|---|---|
| 1900995-011 | 1900995-011 |
| NEXT ASSY | USED ON |
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
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ACSP PN
DRAWN G. DEMMONS DATE 12/23/63
CHECKED G.D.D. 5-15-64
APPROVAL M.R.G. 4-13-64
APPROVAL
NASA APPROVAL 11-6-69
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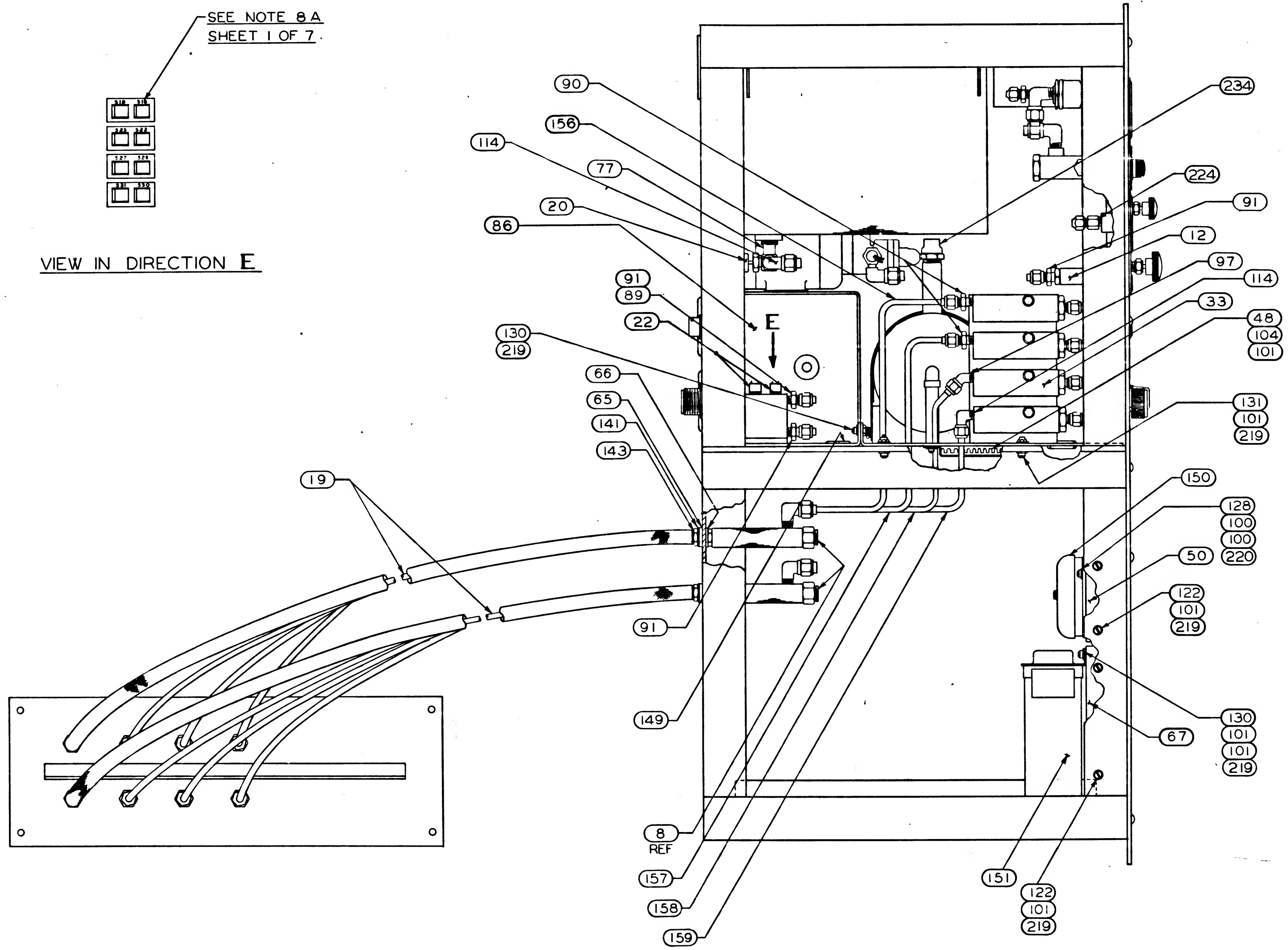
COOLANT SUPPLY
INTERFACE CONTROL

CODE IDENT NO. SIZE E 1900098
SCALE 1/2 SHEET 3 OF 7

MASTER

| REVISIONS TCRR C1944 | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
| C1 | | REPLACES REV "B" WITH CHANGE PER TDRR 13850 | 27 OCT 64 | 21 AUG 64 | JWP |

VIEW IN DIRECTION E



VIEW IN DIRECTION A
(SEE SH 2)

(C1) THIS SHEET ADDED

| | |
|---|---|
| 1900995-011 | 1900995-011 |
| NEXT ASSY | USED ON |
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED
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DO NOT SCALE THIS DRAWING
MATERIAL —
CONTRACT NAS 9-497

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ACSP PN
DRAWN G. DEMMONS DATE 12/18/63
CHECKED G.D.D. 5-15-64
APPROVAL M.R.G. 4-13-64
APPROVAL 10/26/64
NASA APPROVAL 11-6-64
MIT APPROVAL

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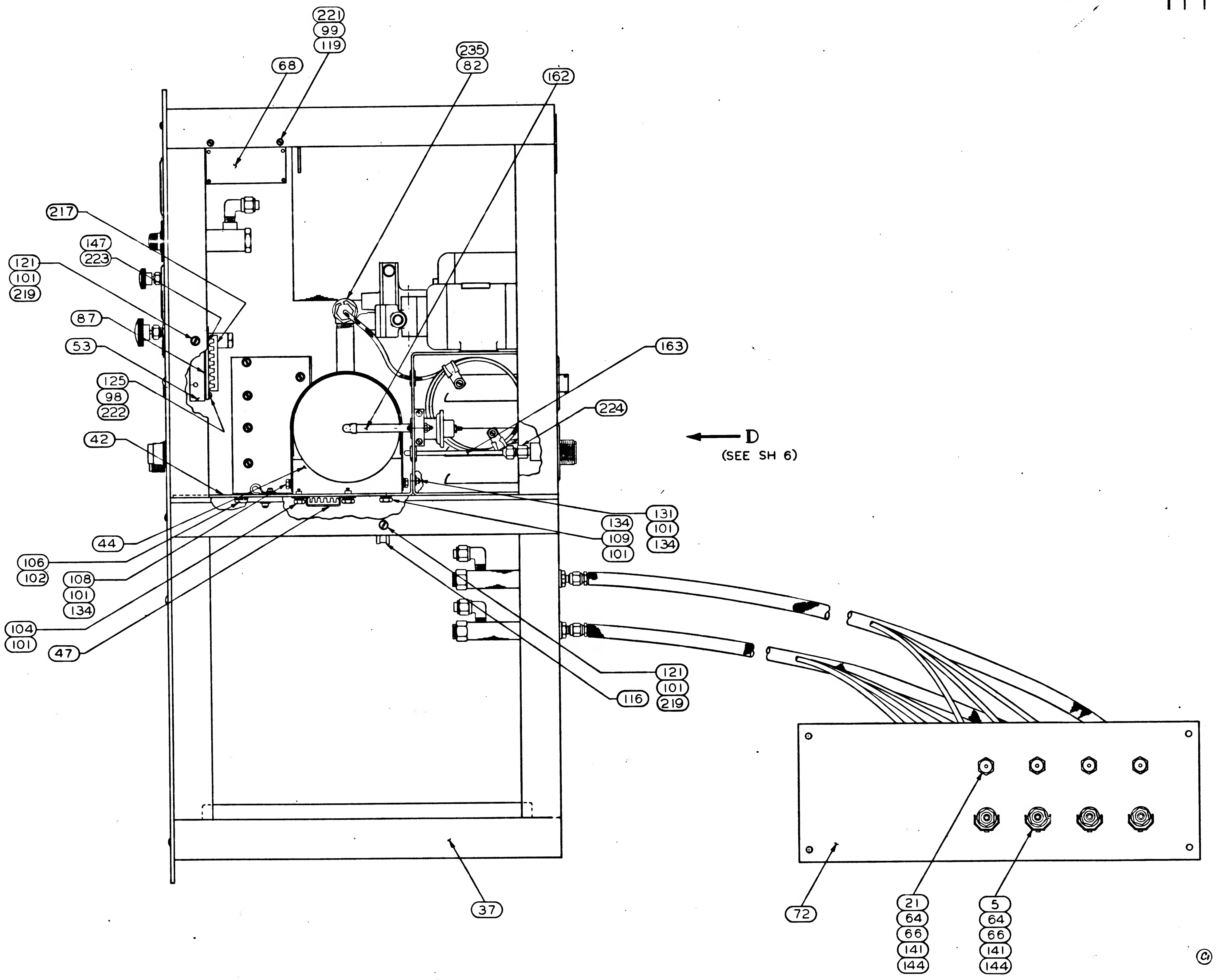
HOUSTON, TEXAS

COOLANT SUPPLY
INTERFACE CONTROL

CODE IDENT NO.
SIZE E
1900098
SCALE 1/2
SHEET 4 OF 7

| REVISIONS TDRR 01244 | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
| C | | REPLACES REV. "B" WITH CHANGE PER TDRR 13850 | 27 OCT 64 | 21 AUG 64 | JWP |



VIEW IN DIRECTION B
(SEE SH 2)

Ⓒ THIS SHEET ADDED

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| 1900995-011 | 1900995-011 |
| NEXT ASSY | USED ON |
| APPLICATION | |

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TOLERANCES ON
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DO NOT SCALE THIS DRAWING
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CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN G. DEMMONS DATE 12/6/63
CHECKED G.D.D. 5-15-64
APPROVAL M.R.G. 6-13-64
APPROVAL 10/6/64
NASA APPROVAL 11-6-64
MIT APPROVAL

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COOLANT SUPPLY
INTERFACE CONTROL

CODE IDENT NO. SIZE E 1900098
SCALE 1/2 SHEET 5 OF 7

MASTER

| REVISIONS TDRC 01944 | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
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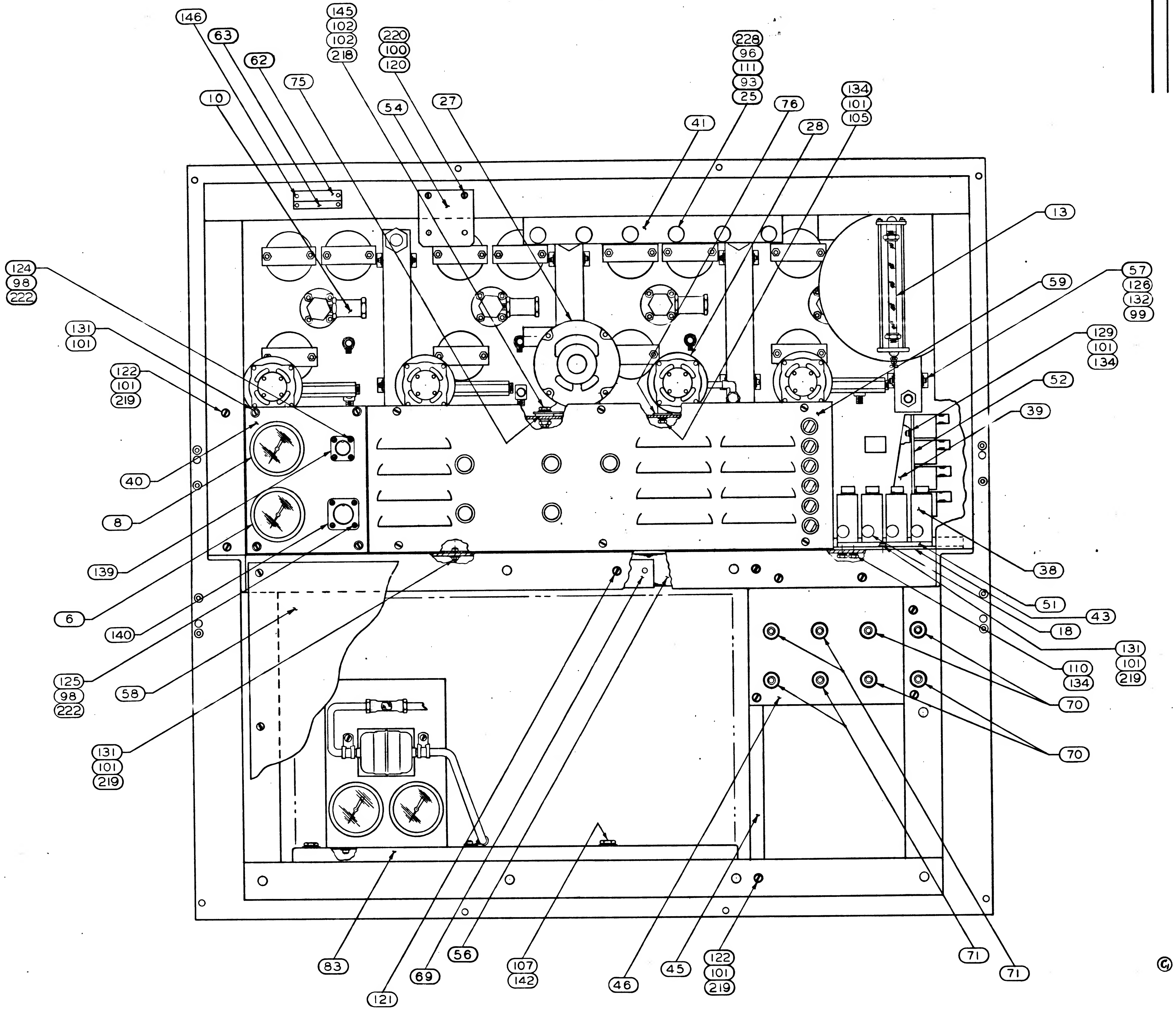

VIEW IN DIRECTION D
(SEE SH 5)

ⓒ THIS SHEET ADDED

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| 1900995-011 | 1900995-011 |
| NEXT ASSY | USED ON |
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
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DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN G DEMMONS DATE 12/1/63
CHECKED G.D.D. 5-15-64
APPROVAL M.R.G. 4-13-64
APPROVAL
NASA APPROVAL 11-6-64
MIT APPROVAL

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INTERFACE CONTROL

CODE IDENT NO.
SIZE E
1900098
SCALE 1/2
SHEET 6 OF 7

MASTER

1900098 C

| REVISIONS TDRR C.8-64 | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
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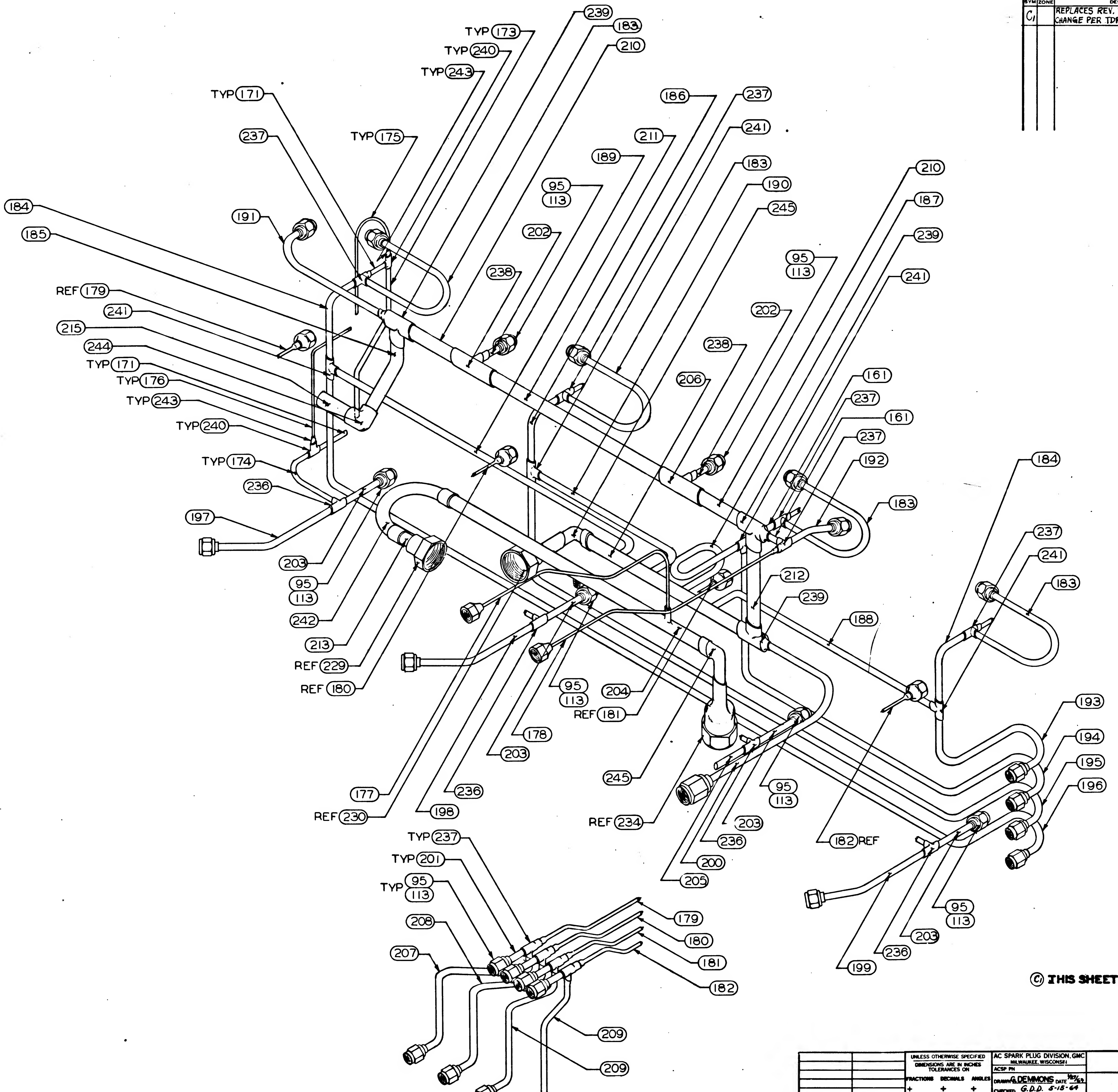

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| 1900995-011 | 1900995-011 |
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| NEXT ASSY | USED ON |
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN G. DEMMONS DATE 4/27/64
CHECKED G.D.D. 5-15-64
APPROVAL M.R.G. 4-13-64
APPROVAL
NASA APPROVAL 11-6-64
MIT APPROVAL

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COOLANT SUPPLY
INTERFACE CONTROL

CODE IDENT NO.
SIZE E
1900098
SCALE 1/2
SHEET 7 OF 7

Apollo G&N Specification
PS-1900098-C

Class B Release
TDRR 02581
14 AUG 63

## PROCUREMENT SPECIFICATION

## COOLANT SUPPLY

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 01941 DATE 10 July 1963

Record of Revisions

| Revision Letter | TDRR No. | Pages Revised | Approvals | | Date |
|---|---|---|---|---|---|
| | | | MIT | NASA | |
| A | | 4-8, 11 and 12 retyped. Was 14 pages now 12 pages. MXC-187908 | | | 7-5-63 |
| B | | 4, 6, 7, 11 and 12, pages 7 and 8 retyped MXC-188337 | | | 7-19-63 |
| C | 02581 | Pages 2, 4, 6, & 7 revised MXC-<br>Pages 2 and 7 retyped. 188985 | WAK | | 8/14/63 |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

This specification consists of page i to iii and 1 to 18 inclusive.

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## COOLANT SUPPLY

The purpose of this document is to establish the manufacturing and test requirements for procurement. The Coolant Supply is intended for use in the ground support equipment of the Apollo Guidance and Navigation program.

Milton B. Trageser 7/10/63
MIT INSTRUMENTATION LABORATORY

Jack Barnard 7/10/63
NASA/MSC APPROVAL

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## PROCUREMENT SPECIFICATION

## COOLANT SUPPLY

### 1. SCOPE

1.1 SCOPE. This specification establishes the requirements for the procurement of a Coolant Supply.

### 2. APPLICABLE DOCUMENTS

2.1 The following documents of the issue in effect on the date of invitation for bids form a part of this specification to the extent specified herein.

SPECIFICATIONS

Military

| | |
|---|---|
| MIL-P-116 | Preservation, Methods of |
| MIL-E-9500 | Ethylene Glycol, Technical Uninhibited (Reference Only) |
| MIL-E-17555 | Electronic and Electrical Equipment and Associated Repair Parts, Preparation for Delivery of |
| MIL-W-27076 | Workmanship Standards for Ground Electronic and Associated Equipment |

Apollo G&N

| | |
|---|---|
| ND-1002018 | General Specification for Apollo Guidance and Navigation Ground Support Equipment |
| ND-1002019 | Marking |
| ND-1002023 | Procedure for Serialization of Components, Assemblies, etc, for Apollo Guidance Navigation Equipment |
| ND-1015404 | General Specification, Configuration Process and Quality Control Requirements for Suppliers of High Reliability Articles for Use in Spacecraft and Supporting Equipment |

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. VENDOR ITEM, SEE SPECIFICATION CONTROL DRAWING
3. APPLY ITEM 246 TO ALL PIPE THREADS
4. DRAWINGS FOR REFERENCE:
   1901090 FLOW SCHEMATIC
   1901092 WIRING SCHEMATIC
5. THIS ASSY CONFORMS WITH THE DIMENSIONAL REQUIREMENTS OF DWG NO. MX111138
6. BRAZE PER MIL-B-7883, USING ITEM 255
7. SUPPLY AND SHOW APPROPRIATE DATA ON NAMEPLATE (ITEM 63) AT ASSY
8. IDENTIFY USING DRAWING NUMBER AND REVISION LETTER PER MIL-STD-130
   (A) RUBBER STAMP WITH BLACK INK PER TT-I-556, .125 HIGH CHARACTERS COAT WITH VARNISH PER MIL-V-173
9. FOR TEST PROCEEDURES SEE P.S.1900098, PARAGRAPH 4

SEE NOTE 2

SEE NOTE 2

SEE NOTE 2

SEE NOTE 2

| | | | 011 | EFFECTIVITY | ITEM NO | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | AR | | 255 | QQ-S-571, TYPE Sn 60 | SOLDER |
| | | | AR | | 254 | MIL-MP-15280<br>TYPE II, FORM II | .50 THK INSULATION (ARMAFLEX)<br>2 SQ FEET TOTAL LENGTH |
| | | | AR | | 253 | MIL-MP-15280<br>TYPE II, FORM II | .13 THK INSULATION (ARMAFLEX)<br>1 SQ FOOT TOTAL LENGTH |
| | | | AR | | 252 | MIL-MP-15280<br>TYPE II, FORM I | 1.63 ID, NO.22 TUBING (ARMAFLEX)<br>2 FEET TOTAL LENGTH |
| | | | AR | | 251 | MIL-MP-15280<br>TYPE II, FORM I | .38 ID, NO.22 TUBING (ARMAFLEX)<br>35 FEET TOTAL LENGTH |
| | | | AR | | 250 | MIL-MP-15280<br>TYPE II, FORM I | .63 ID, NO.22 TUBING (ARMAFLEX)<br>23 FEET TOTAL LENGTH |
| | | | AR | | 249 | MIL-MP-15280<br>TYPE II, FORM I | .88 ID, NO.22 TUBING (ARMAFLEX)<br>12 FEET TOTAL LENGTH |
| | | | AR | | 248 | MIL-MP-15280<br>TYPE II, FORM I | 1.13 ID, NO.22 TUBING (ARMAFLEX)<br>3 FEET TOTAL LENGTH |
| | | | - | | 247 | 1901091 | WIRING DIAGRAM |
| | | | AR | | 246 | 1016198-001 | SEALING COMPOUND (GLYPTAL) |
| | | | 2 | | 245 | 1016317-006 | ELBOW, STREET, 90° |
| | | | 1 | | 244 | 1016317-005 | ELBOW, 90° |
| | | | 8 | | 243 | 1016320-001 | EXTENDED BUSHING |
| | | | 1 | | 242 | 1016335-001 | RETURN BEND |
| | | | 4 | | 241 | 1016326-006 | TEE |
| | | | 8 | | 240 | 1016326-005 | TEE |
| | | | 3 | | 239 | 1016326-004 | TEE |
| | | | 2 | | 238 | 1016326-003 | TEE |
| | | | 9 | | 237 | 1016326-002 | TEE |
| | | | 4 | | 236 | 1016326-001 | TEE |
| | | | 1 | | 235 | 1901143-002 | TUBE |
| | | | 1 | | 234 | 1016329-001 | ADAPTER |
| | | | 4 | | 233 | 1901181 | KNOB |
| | | | 4 | | 232 | 1901180-003 | BUSHING (RATIO DRIVE KNOB) |
| | | | 1 | | 231 | 1016310-001 | BUSHING |
| | | | 1 | | 230 | 1016312-001 | UNION |
| | | | 1 | | 229 | 1016313-001 | UNION |
| | | | 10 | | 228 | 1016308-001 | HALF UNION COUPLING |
| | | | 1 | | 227 | 1016314-001 | TEE |
| | | | 1 | | 226 | MS 28778-2 | PACKING |
| | | | 1 | | 225 | 1901169 | FITTING, FLOWMETER, CKT 1 |
| | | | 5 | | 224 | 1016307-001 | FITTING, COUPLING |
| | | | 1 | | 223 | 1016325-008 | TERMINAL BLOCK |
| | | | 12 | | 222 | 1016151-004 | NUT |
| | | | 10 | | 221 | 1016151-006 | NUT |
| | | | 3 | | 220 | 1016151-008 | NUT |
| | | | 66 | | 219 | 1016151-010 | NUT |
| | | | 4 | | 218 | 1016151-012 | NUT |
| | | | 1 | | 217 | 1901177-002 | COVER, TERMINAL BOARD |
| | | | 2 | | 216 | 1901077-002 | METER FLOW RATE INDICATOR, MODIFIED |
| | | | 1 | | 215 | 1901143-001 | TUBE |
| | | | 4 | | 214 | 1901160 | SPACER |
| | | | 1 | | 213 | 1901137-004 | TUBE |
| | | | 1 | | 212 | 1901137-003 | TUBE |
| | | | 1 | | 211 | 1901137-002 | TUBE |
| | | | 2 | | 210 | 1901137-001 | TUBE |
| | | | 2 | | 209 | 1901136 | TUBE |
| | | | 1 | | 208 | 1901135 | TUBE |
| | | | 1 | | 207 | 1901134 | TUBE |
| | | | 1 | | 206 | 1901142 | TUBE |
| | | | 1 | | 205 | 1901140 | TUBE |
| | | | 1 | | 204 | 1901175 | TUBE |
| | | | 4 | | 203 | 1901133-003 | TUBE |
| | | | 2 | | 202 | 1901133-002 | TUBE |
| | | | 4 | | 201 | 1901133-001 | TUBE |
| | | | 1 | | 200 | 1901132 | TUBE |
| | | | 1 | | 199 | 1901189 | TUBE |
| | | | 1 | | 198 | 1901188 | TUBE |
| | | | 1 | | 197 | 1901187 | TUBE |
| | | | 1 | | 196 | 1901178 | TUBE |
| | | | 1 | | 195 | 1901130 | TUBE |
| | | | 1 | | 194 | 1901139 | TUBE |
| | | | 1 | | 193 | 1901129 | TUBE |
| | | | 1 | | 192 | 1901128 | TUBE |
| | | | 1 | | 191 | 1901127 | TUBE |
| | | | 1 | | 190 | 1901183-001 | TUBE |
| | | | 1 | | 189 | 1901126-002 | TUBE |
| | | | 1 | | 188 | 1901126-001 | TUBE |
| | | | 1 | | 187 | 1901125 | TUBE |
| | | | 1 | | 186 | 1901183-003 | TUBE |
| | | | 1 | | 185 | 1901141 | TUBE |
| | | | 2 | | 184 | 1901183-002 | TUBE |
| | | | 4 | | 183 | 1901123 | TUBE |
| | | | 1 | | 182 | 1901122 | TUBE |
| | | | 1 | | 181 | 1901121 | TUBE |
| | | | 1 | | 180 | 1901120 | TUBE |
| | | | 1 | | 179 | 1901119 | TUBE |
| | | | 1 | | 178 | 1901118 | TUBE |
| | | | 1 | | 177 | 1901117 | TUBE |
| | | | 4 | | 176 | 1901116 | TUBE |
| | | | 4 | | 175 | 1901115 | TUBE |
| | | | 4 | | 174 | 1901114 | TUBE |
| | | | 4 | | 173 | 1901113 | TUBE |
| | | | | | 172 | | |
| | | | 8 | | 171 | 1901112 | TUBE |
| | | | 1 | | 170 | 1901111 | TUBE ASSY, PUMP, CKT 4 |

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

SEE NOTE 2

SEE NOTE 2

SEE NOTE 2

SEE NOTE 2

| | | | 011 | EFFECTIVITY | ITEM NO | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | 1 | | 169 | 1901110 | TUBE ASSY, PUMP, CKT 3 |
| | | | 1 | | 168 | 1901109 | TUBE ASSY, PUMP, CKT 2 |
| | | | 1 | | 167 | 1901108 | TUBE ASSY, PUMP, CKT 1 |
| | | | 1 | | 166 | 1901107 | TUBE ASSY, BLEED STATION, CKT 4 |
| | | | 1 | | 165 | 1901106 | TUBE ASSY, BLEED STATION, CKT 3 |
| | | | 1 | | 164 | 1901105 | TUBE ASSY, BLEED STATION, CKT 2 |
| | | | 1 | | 163 | 1901104 | TUBE ASSY, BLEED STATION, CKT 1 |
| | | | 1 | | 162 | 1901174-002 | TUBE, STRAIGHT |
| | | | 2 | | 161 | 1901174-001 | TUBE STRAIGHT |
| | | | 1 | | 160 | 1901101 | TUBE ASSY, GAGE |
| | | | 1 | | 159 | 1901100 | TUBE ASSY, FLOW SWITCH CKT 4 |
| | | | 1 | | 158 | 1901099 | TUBE ASSY, FLOW SWITCH CKT 3 |
| | | | 1 | | 157 | 1901098 | TUBE ASSY, FLOW SWITCH CKT 2 |
| | | | 1 | | 156 | 1901097 | TUBE ASSY, FLOW SWITCH, CKT 1 |
| | | | 1 | | 155 | 1901096 | TUBE ASSY, FILTER, CKT 4 |
| | | | 1 | | 154 | 1901095 | TUBE ASSY, FILTER, CKT 3 |
| | | | 1 | | 153 | 1901094 | TUBE ASSY, FILTER, CKT 2 |
| | | | 1 | | 152 | 1901093 | TUBE ASSY, FILTER, CKT 1 |
| | | | 1 | | 151 | 1016349 | TRANSFORMER |
| | | | 1 | | 150 | MIL-S-8372, TYPE J3 | SIGNAL ASSY, EMER CREW WARNING |
| | | | 4 | | 149 | MS 35489-12 | GROMMET, RUBBER |
| | | | 4 | | 148 | MS 35338-82 | WASHER, LOCK, SPLIT, MED |
| | | | 16 | | 147 | MS 35333-71 | WASHER, LOCK, FLAT, INTERNAL TOOTH |
| | | | 4 | | 146 | MS 21318-14 | SCREW, DRIVE, ROUND HD, TYPE U |
| | | | 4 | | 145 | MS 20073-04-11 | BOLT, MACH, DRILLED HD |
| | | | 8 | | 144 | AN 924-4C | NUT, FLARE TUBE, BULKHEAD |
| | | | 8 | | 143 | AN 924-4B | NUT, FLARE TUBE, BULKHEAD |
| | | | 4 | | 142 | AN 960C516 | WASHER, FLAT |
| | | | 16 | | 141 | AN 960C716 | WASHER, FLAT |
| | | | 1 | | 140 | MS 3102R20-15P | CONNECTOR, RECEPTACLE, ELECTRIC |
| | | | 1 | | 139 | MS 3122E14-15P | CONNECTOR, RECEPTACLE, ELECTRIC |
| | | | 1 | | 138 | MS 91528-2K2D | KNOB, CONTROL |
| | | | 3 | | 137 | MS 25068-23 | SWITCH, TOGGLE |
| | | | 2 | | 136 | MS 35489-43 | GROMMET, RUBBER |
| | | | 8 | | 135 | MS 35489-37 | GROMMET, RUBBER |
| | | | 45 | | 134 | MS 35338-81 | WASHER, LOCK, SPLIT, MED |
| | | | 6 | | 133 | MS 35338-80 | WASHER, LOCK, SPLIT, MED |
| | | | 16 | | 132 | MS 35338-79 | WASHER, LOCK, SPLIT, MED |
| | | | 19 | | 131 | MS 35276-65 | SCR, MACH, DRILLED FILLISTER HD |
| | | | 8 | | 130 | MS 35276-64 | SCR, MACH, DRILLED FILLISTER HD |
| | | | 8 | | 129 | MS 35275-64 | SCR, MACH, DRILLED FILLISTER HD |
| | | | 3 | | 128 | MS 35275-46 | SCR, MACH, DRILLED FILLISTER HD |
| | | | 4 | | 127 | MS 35275-32 | SCR, MACH, DRILLED FILLISTER HD |
| | | | 16 | | 126 | MS 35275-26 | SCR, MACH, DRILLED FILLISTER HD |
| | | | 8 | | 125 | MS 35275-18 | SCR, MACH, DRILLED FILLISTER HD |
| | | | 4 | | 124 | MS 35275-16 | SCR, MACH, DRILLED FILLISTER HD |
| | | | 16 | | 123 | MS 35250-78 | SCR, MACH, FLAT HD, 82°, SLOTTED |
| | | | 19 | | 122 | MS 35250-74 | SCR, MACH, FLAT HD, 82°, SLOTTED |
| | | | 5 | | 121 | MS 35250-73 | SCR, MACH, FLAT HD, 82°, SLOTTED |
| | | | 2 | | 120 | MS 35249-53 | SCR, MACH, FLAT HD, 82°, SLOTTED |
| | | | 2 | | 119 | MS 35249-38 | SCR, MACH, FLAT HD, 82°, SLOTTED |
| | | | 14 | | 118 | MS 35217-57 | SCR, MACH, PAN HD, CROSS-RECESSED |
| | | | 4 | | 117 | MS 35216-28 | SCR, MACH, PAN HD, CROSS-RECESSED |
| | | | 1 | | 116 | MS 21919DG6 | CLAMP, CUSHIONED |
| | | | 3 | | 115 | MS 21919DG3 | CLAMP, CUSHIONED |
| | | | 13 | | 114 | MS 20822-6B | ELBOW, FLARE TUBE & PIPE, 90° |
| | | | 10 | | 113 | MS 20189-6B | SLEEVE, FLARE TUBE |
| | | | 2 | | 112 | MS 20819-5B | SLEEVE, FLARE TUBE |
| | | | 6 | | 111 | MS 20819-4B | SLEEVE, FLARE TUBE |
| | | | 8 | | 110 | MS 20074-03-06 | BOLT, MACH, DRILLED HD |
| | | | 4 | | 109 | MS 20074-03-05 | BOLT, MACH, DRILLED HD |
| | | | 4 | | 108 | MS 20074-03-04 | BOLT, MACH, DRILLED HD |
| | | | 4 | | 107 | MS 20074-05-07 | BOLT, MACH, DRILLED HD |
| | | | 2 | | 106 | MS 20073-04-05 | BOLT, MACH, DRILLED HD |
| | | | 16 | | 105 | MS 20073-03-05 | BOLT, MACH, DRILLED HD |
| | | | 10 | | 104 | MS 20073-03-04 | BOLT, MACH, DRILLED HD |
| | | | 1 | | 103 | AN 6290-12 | GASKET |
| | | | 10 | | 102 | AN 960C416 | WASHER, FLAT |
| | | | 93 | | 101 | AN 960C10 | WASHER, FLAT |
| | | | 8 | | 100 | AN 960C8 | WASHER, FLAT |
| | | | 28 | | 99 | AN 960C6 | WASHER, FLAT |
| | | | 12 | | 98 | AN 960C4 | WASHER, FLAT |
| | | | 1 | | 97 | AN 823-6B | ELBOW, FLARE TUBE & PIPE, 45° |
| | | | 6 | | 96 | AN 823-4B | ELBOW, FLARE TUBE & PIPE, 45° |
| | | | 10 | | 95 | AN 818-6B | NUT, COUPLING |
| | | | 2 | | 94 | AN 818-5B | NUT, COUPLING |
| | | | 6 | | 93 | AN 818-4B | NUT, COUPLING |
| | | | 2 | | 92 | AN 816-6B | NIPPLE, FLARE TUBE & PIPE |
| | | | 10 | | 91 | AN 816-6-2B | NIPPLE, FLARE TUBE & PIPE |
| | | | 2 | | 90 | AN 816-5-4B | NIPPLE, FLARE TUBE & PIPE |
| | | | 2 | | 89 | AN 816-5B | NIPPLE, FLARE TUBE & PIPE |
| | | | 1 | | 88 | AN 814-12C | PLUG & BLEEDER |
| | | | 1 | | 87 | 1901086-003 | STRIP, MARKER |
| | | | 1 | | 86 | 1901083 | CASE ASSY, ELECTRICAL EQUIP, |
| | | | 3 | | 85 | 1901082-022 | DIAL ASSY, TEMP CONTROL |
| | | | 1 | | 84 | 1901082-011 | DIAL ASSY, TEMP CONTROL |
| | | | 1 | | 83 | 1901081 | CONDENSING UNIT, HERMETIC |
| | | | 1 | | 82 | 1901079 | SOCKET, BULB, SENSING |
| | | | 1 | | 81 | 1901077-001 | METER, FLOW RATE INDICATOR, MODIFIED |
| | | | 1 | | 80 | 1901076 | VALVE, RESERVOIR |
| | | | 2 | | 79 | 1901074-002 | ELBOW, FLARE TO PIPE |
| | | | 2 | | 78 | 1901074-001 | ELBOW, FLARE TO PIPE |
| | | | 1 | | 77 | 1901071 | ELBOW ASSY, TANK |
| | | | 16 | | 76 | 1901069-002 | INSULATOR, MOTOR-PUMP |
| | | | 4 | | 75 | 1901069-001 | INSULATOR, MOTOR-PUMP |
| | | | 1 | | 74 | 1901068 | MANIFOLD ASSY, HEATER |
| | | | 3 | | 73 | 1901062 | MANIFOLD ASSY, HEATER |
| | | | 1 | | 72 | 1901061 | PLATE, QUICK DISCONNECT |
| | | | 4 | | 71 | 1901060-021 | MANIFOLD ASSY, TEMP. SENSING |
| | | | 4 | | 70 | 1901060-011 | MANIFOLD ASSY, TEMP. SENSING |
| | | | 1 | | 69 | 1901057 | BRACKET, HEAT INTERCHANGER |
| | | | 1 | | 68 | 1901056 | PLATE, MOUNTING, NAMEPLATE |
| | | | 1 | | 67 | 1901055 | BRACKET, TRANSFORMER |
| | | | 16 | | 66 | 1901054 | INSULATOR, REAR |
| | | | 8 | | 65 | 1901052-002 | INSULATOR, FRONT |
| | | | 8 | | 64 | 1901052-001 | INSULATOR, FRONT |
| | | | 1 | | 63 | 1901053 | PLATE, IDENTIFICATION |
| | | | 1 | | 62 | 1901179 | PLATE, IDENTIFICATION |
| | | | 2 | | 61 | 1901049 | CLAMP, CHILLER |
| | | | 1 | | 60 | 1901047 | BRACKET, OIL TANK |
| | | | 1 | | 59 | 1901046 | COVER, ELECTRICAL BOX |
| | | | 1 | | 58 | 1901045 | PANEL, REAR |
| | | | 16 | | 57 | 1901044 | CLAMP, FLOWMETER |
| | | | 1 | | 56 | 1901176 | HEAT INTERCHANGER ASSY, REFRIGERANT |
| | | | | | 55 | | |

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
|---|---|---|---|---|---|
| C1 | | REPLACES REV. "B" WITH CHANGE PER TDRR 13850 | | AUG 64 | WP |
| | | REVISED PER CM 304982 PER TDRR 5774 | — | | |

REVISIONS

| SHEET 1 | SHEET 2 | SHEET 3 | SHEET 4 | SHEET 5 | SHEET 6 | SHEET 7 |
|---|---|---|---|---|---|---|
| D | C | D | C | C | C | C |

REVISION STATUS OF SHEETS

Ⓒ1 REPLACES REV B WITH CHANGE

SEE NOTE 2

SEE NOTE 2

SEE NOTE 2

| | | | 011 | EFFECTIVITY | ITEM NO | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | 1 | | 54 | 1901041 | BRACKET, SUPPORT, HOSE |
| | | | 1 | | 53 | 1901039 | BRACKET, TERMINAL STRIP |
| | | | 1 | | 52 | 1901037 | INSULATOR, FLOW SWITCH |
| | | | 1 | | 51 | 1901036 | INSULATOR, THERMOSTAT MANIFOLD |
| | | | 1 | | 50 | 1901031 | BRACKET, AUDIBLE ALARM |
| | | | 2 | | 49 | 1901027 | CLAMP, TUBE |
| | | | 2 | | 48 | 1901026 | CLAMP ASSY, CABLE |
| | | | 1 | | 47 | 1901025 | CLAMP ASSY, CABLE |
| | | | 1 | | 46 | 1901024 | PLATE, MOUNTING, INLET & OUTLET |
| | | | 1 | | 45 | 1901023 | BRACKET, ANGLE |
| | | | 2 | | 44 | 1901022 | SUPPORT, CHILLER |
| | | | 1 | | 43 | 1901021 | BRACKET, THERMOSTAT |
| | | | 1 | | 42 | 1901020 | PLATE, MOUNTING, CHILLER |
| | | | 1 | | 41 | 1901018 | BRACKET, BLEED VALVE |
| | | | 1 | | 40 | 1901017 | PANEL, ELECTRICAL CONNECTOR |
| | | | 1 | | 39 | 1901016 | BRACKET, FLOW SWITCH |
| | | | 4 | | 38 | 1901013 | MANIFOLD, THERMOSTATIC |
| | | | 1 | | 37 | 1901012 | FRAME, COOLANT, EQUIPMENT |
| | | | 1 | | 36 | 1901009 | PANEL, FRONT |
| | | | 1 | | 35 | 1901007 | CHART, CALIBRATION |
| | | | 1 | | 34 | 1901006 | TANK, RESERVOIR |
| | | | 4 | | 33 | 1901004 | FLOW SWITCH ASSY |
| | | | 1 | | 32 | 1901003-001 | METER, FLOW RATE INDICATOR, FLOAT TYPE |
| | | | 1 | | 31 | 1897151 | SWITCH, ROTARY SELECTOR |
| | | | 1 | | 30 | 1901001-021 | VALVE, TEMP. REGULATING |
| | | | 3 | | 29 | 1901001-011 | VALVE, TEMP. REGULATING |
| | | | 4 | | 28 | 1897150 | PUMP, ROTARY, POWER DRIVEN |
| | | | 1 | | 27 | 1900893 | PUMP, CENTRIFUGAL |
| | | | 1 | | 26 | 1900841 | EXCHANGER, HEAT |
| | | | 6 | | 25 | 1016272 | VALVE, BLEED |
| | | | 4 | | 24 | 1016271 | HEATER |
| | | | 1 | | 23 | 1016306-041 | FILTER |
| | | | 8 | | 22 | 1897162 | SWITCH, THERMOSTATIC |
| | | | 4 | | 21 | 1016238-002 | COUPLING HALF, QUICK DISCONNECT |
| | | | 1 | | 20 | 1016180-003 | VALVE-GLOBE, FEMALE TO FEMALE |
| | | | 8 | | 19 | 1016179 | HOSE ASSY, LOW PRESSURE |
| | | | 4 | | 18 | 1016178-005 | SWITCH, PRESS ACTUATED |
| | | | 1 | | 17 | 1016177 | SWITCH ASSY, PUSH BUTTON |
| | | | 4 | | 16 | 1016148-002 | VALVE, FLOW CONTROL |
| | | | 4 | | 15 | 1016148-001 | VALVE, FLOW CONTROL |
| | | | 1 | | 14 | 1016145-001 | VALVE, RELIEF |
| | | | 1 | | 13 | 1016144-001 | GAGE, LIQUID LEVEL |
| | | | 4 | | 12 | 1016143 | VALVE, CHECK |
| | | | 3 | | 11 | 1016142-001 | FILTER, IN LINE |
| | | | 4 | | 10 | 1016141-001 | VALVE, CHECK |
| | | | 4 | | 9 | 1016136-003 | GAGE, PRESS. |
| | | | 9 | | 8 | 1016137-001 | GAGE, TEMP. |
| | | | 4 | | 7 | 1015869-356 | SWITCH ASSY, LIGHT INDICATOR |
| | | | 1 | | 6 | 1016136-002 | GAGE, PRESS. |
| | | | 4 | | 5 | 1016019-005 | COUPLING HALF-QUICK DISC. (FEMALE) |
| | | | 4 | | 4 | 1015869-538 | SWITCH ASSY, LIGHT INDICATOR |
| | | | 4 | | 3 | 1015869-355 | SWITCH ASSY, LIGHT INDICATOR |
| | | | 1 | | 2 | 1015869-163 | SWITCH ASSY, LIGHT INDICATOR |
| | | | 2 | | 1 | 1015869-162 | SWITCH ASSY, LIGHT INDICATOR |

QUANTITY REQUIRED — LIST OF PARTS AND MATERIALS

| NEXT ASSY | USED ON | APPLICABLE DASH NO |
|---|---|---|
| APPLICATION | | |

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± — DECIMALS ± — ANGLES ± —
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

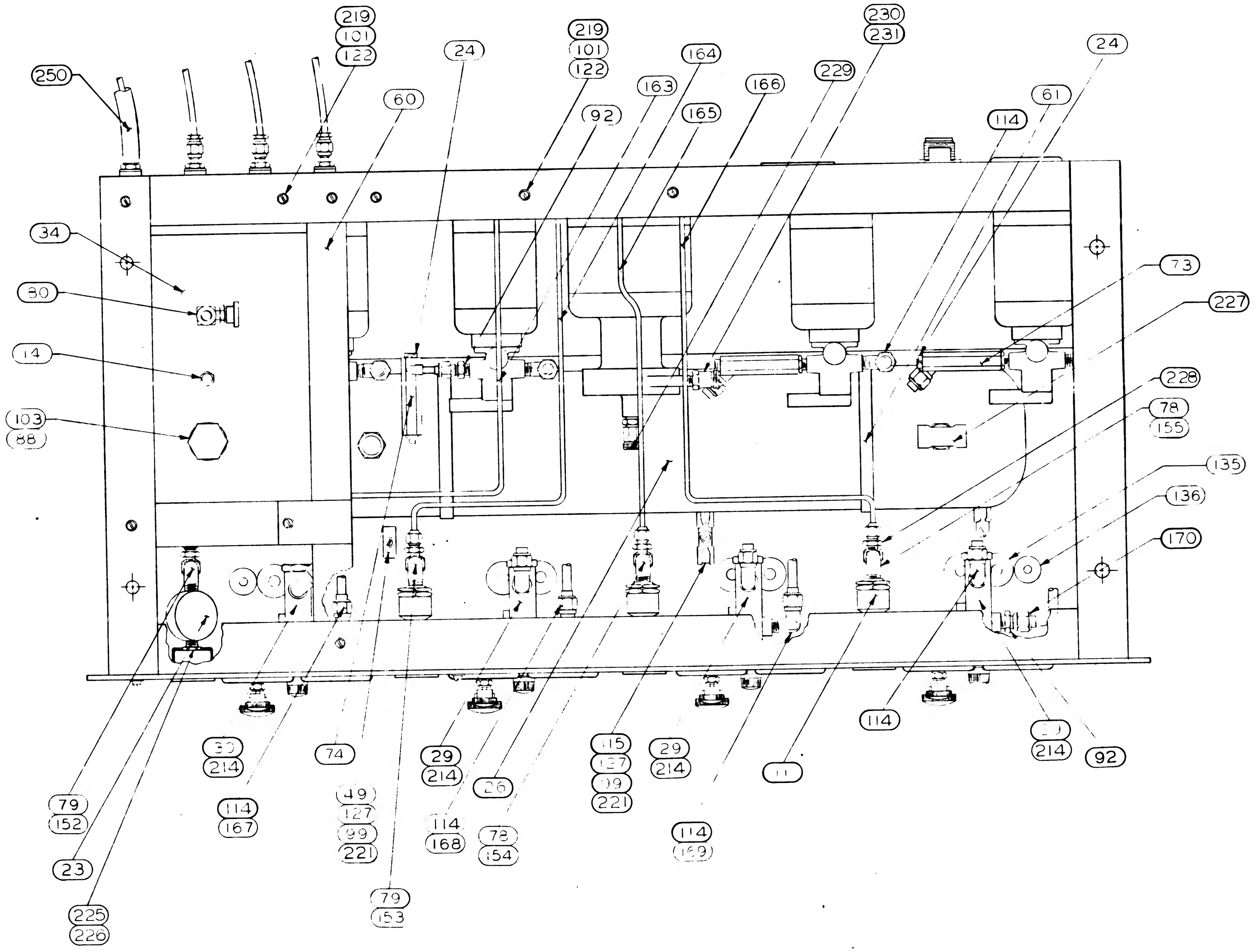
AC SPARK PLUG DIVISION, GMC
MILWAUKEE WISCONSIN
ACSP PN
DRAWN G. DEMMONS DATE 1/6/64
CHECKED G.D.D. 5-14-63
APPROVAL MRG. 4-13-64
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

# COOLANT SUPPLY INTERFACE CONTROL

CODE IDENT NO
SIZE E
1900098
SCALE 1/2
SHEET 1 OF 7

| SYM | ZONE | DESCRIPTION | CHG NO | DATE | APPD |
|---|---|---|---|---|---|
| REVISIONS TDRR C1944 | | | | | |
| C1 | | REPLACES REV. "B" WITH CHANGE PER TDRR 13850 | 27 OCT 64 | 27 AUG 64 | JWP |
| D1 | C-6 | REVISED PER CM 304982 PER TDRR 15774 | — | 1 DEC 64 | |



VIEW IN DIRECTION C
(SEE SH 2)

C1 THIS SHEET ADDED

| | |
|---|---|
| 1900995-C11 | 1900995-011 |
| NEXT ASSY | USED ON |
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION GMC
MILWAUKEE WISCONSIN
ACSP PN
DRAWN G DEMMONS
CHECKED G.D.D. 5-15-64
APPROVAL
APPROVAL
NASA APPROVAL
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON TEXAS

COOLANT SUPPLY
INTERFACE CONTROL

CODE IDENT NO
SIZE E
1900098
SCALE 1/2
SHEET 3 OF 7

1900098 D

NOTES
1. INTERPRET DRAWING IN ACCORDANCE WITH STANDARDS PRESCRIBED BY MIL-D-70327
2. VENDOR ITEM, SEE SPECIFICATION CONTROL DRAWING
3. APPLY ITEM 246 TO ALL PIPE THREADS
4. DRAWINGS FOR REFERENCE:
   1901090 FLOW SCHEMATIC
   1901092 WIRING SCHEMATIC
5. THIS ASSY CONFORMS WITH THE DIMENSIONAL REQUIREMENTS OF DWG NO. MX111138
6. BRAZE PER MIL-B-7883, USING ITEM 255
7. SUPPLY AND SHOW APPROPRIATE DATA ON NAMEPLATE (ITEM 63) AT ASSY
8. IDENTIFY USING DRAWING NUMBER AND REVISION LETTER PER MIL-STD-130
   (A) RUBBER STAMP WITH BLACK INK PER TT-I-558, .125 HIGH CHARACTERS COAT WITH VARNISH PER MIL-V-173
9. FOR TEST PROCEEDURES SEE P.S.1900098, PARAGRAPH 4

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| SYM | ZONE | DESCRIPTION | CHG NO. | DATE | APPD. |
| C₁ | | REPLACES REV. "B" WITH CHANGE PER TDRR 13650 | 27 OCT 64 | 21 AUG 64 | JWP |
| D₁ | | REVISED PER CM 304982 PER TDRR 15774 | — | 1 DEC 64 | |
| E | | REVISED PER TDRR 15786 | | 1 FEB 65 | JWP |

| SHEET 1 | SHEET 2 | SHEET 3 | SHEET 4 | SHEET 5 | SHEET 6 | SHEET 7 |
|---|---|---|---|---|---|---|
| E | C | E | C | C | C | C |
| D | C | D | C | C | C | C |

REVISION STATUS OF SHEETS

Ⓒ₁ REPLACES REV "B" WITH CHANGE

SEE NOTE 2

SEE NOTE 2

| QUANTITY REQUIRED | | | 011 | EFFECTIVITY | ITEM NO. | PART OR IDENTIFYING NUMBER | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|---|---|---|---|
| | | | AR | | 255 | QQ-S-571, TYPE Sn 60 | SOLDER |
| | | | AR | | 254 | MIL-MP-15280<br>TYPE II, FORM II | .50 THK INSULATION (ARMAFLEX)<br>2 SQ FEET TOTAL LENGTH |
| | | | AR | | 253 | MIL-MP-15280<br>TYPE II, FORM II | .13 THK INSULATION (ARMAFLEX)<br>1 SQ FOOT TOTAL LENGTH |
| | | | AR | | 252 | MIL-MP-15280<br>TYPE II, FORM I | 1.63 ID, NO.22 TUBING (ARMAFLEX)<br>2 FEET TOTAL LENGTH |
| | | | AR | | 251 | MIL-MP-15280<br>TYPE II, FORM I | .38 ID, NO.22 TUBING (ARMAFLEX)<br>35 FEET TOTAL LENGTH |
| | | | AR | | 250 | MIL-MP-15280<br>TYPE II, FORM I | .63 ID, NO.22 TUBING (ARMAFLEX)<br>23 FEET TOTAL LENGTH |
| | | | AR | | 249 | MIL-MP-15280<br>TYPE II, FORM I | .88 ID, NO.22 TUBING (ARMAFLEX)<br>12 FEET TOTAL LENGTH |
| | | | AR | | 248 | MIL-MP-15280<br>TYPE II, FORM I | 1.13 ID, NO.22 TUBING (ARMAFLEX)<br>3 FEET TOTAL LENGTH |
| | | | - | | 247 | 1901091 | WIRING DIAGRAM |
| | | | AR | | 246 | 1016198-001 | SEALING COMPOUND (GLYPTAL) |
| | | | 2 | | 245 | 1016317-006 | ELBOW, STREET, 90° |
| | | | 1 | | 244 | 1016317-005 | ELBOW, 90° |
| | | | 8 | | 243 | 1016320-001 | EXTENDED BUSHING |
| | | | 1 | | 242 | 1016335-001 | RETURN BEND |
| | | | 4 | | 241 | 1016326-006 | TEE |
| | | | 8 | | 240 | 1016326-005 | TEE |
| | | | 3 | | 239 | 1016326-004 | TEE |
| | | | 2 | | 238 | 1016326-003 | TEE |
| | | | 9 | | 237 | 1016326-002 | TEE |
| | | | 4 | | 236 | 1016326-001 | TEE |
| | | | 1 | | 235 | 1901143-002 | TUBE |
| | | | 1 | | 234 | 1016329-001 | ADAPTER |
| | | | 4 | | 233 | 1901181 | KNOB |
| | | | 4 | | 232 | 1901180-003 | BUSHING (RATIO DRIVE KNOB) |
| | | | 1 | | 231 | 1016310-001 | BUSHING |
| | | | 1 | | 230 | 1016312-001 | UNION |
| | | | 1 | | 229 | 1016313-001 | UNION |
| | | | 10 | | 228 | 1016308-001 | HALF UNION COUPLING |
| | | | 1 | | 227 | 1016314-001 | TEE |
| | | | 1 | | 226 | MS 28778-2 | PACKING |
| | | | 1 | | 225 | 1901169 | FITTING, FLOWMETER, CKT 1 |
| | | | 5 | | 224 | 1016307-001 | FITTING, COUPLING |
| | | | 1 | | 223 | 1016325-008 | TERMINAL BLOCK |
| | | | 12 | | 222 | 1016151-004 | NUT |
| | | | 10 | | 221 | 1016151-006 | NUT |
| | | | 3 | | 220 | 1016151-008 | NUT |
| | | | 66 | | 219 | 1016151-010 | NUT |
| | | | 4 | | 218 | 1016151-012 | NUT |
| | | | 1 | | 217 | 1901177-002 | COVER, TERMINAL BOARD |
| | | | 2 | | 216 | 1901077-002 | METER FLOW RATE INDICATOR, MODIFIED |
| | | | 1 | | 215 | 1901143-001 | TUBE |
| | | | 4 | | 214 | 1901160 | SPACER |
| | | | 1 | | 213 | 1901137-004 | TUBE |
| | | | 1 | | 212 | 1901137-003 | TUBE |
| | | | 1 | | 211 | 1901137-002 | TUBE |
| | | | 2 | | 210 | 1901137-001 | TUBE |
| | | | 2 | | 209 | 1901136 | TUBE |
| | | | 1 | | 208 | 1901135 | TUBE |
| | | | 1 | | 207 | 1901134 | TUBE |
| | | | 1 | | 206 | 1901142 | TUBE |
| | | | 1 | | 205 | 1901140 | TUBE |
| | | | 1 | | 204 | 1901[illegible]75 | TUBE |
| | | | 4 | | 203 | 1901133-003 | TUBE |
| | | | 2 | | 202 | 1901133-002 | TUBE |
| | | | 4 | | 201 | 1901133-001 | TUBE |
| | | | 1 | | 200 | 1901132 | TUBE |
| | | | 1 | | 199 | 1901189 | TUBE |
| | | | 1 | | 198 | 1901188 | TUBE |
| | | | 1 | | 197 | 1901187 | TUBE |
| | | | 1 | | 196 | 1901178 | TUBE |
| | | | 1 | | 195 | 1901130 | TUBE |
| | | | 1 | | 194 | 1901139 | TUBE |
| | | | 1 | | 193 | 1901129 | TUBE |
| | | | 1 | | 192 | 1901128 | TUBE |
| | | | 1 | | 191 | 1901127 | TUBE |
| | | | 1 | | 190 | 1901183-001 | TUBE |
| | | | 1 | | 189 | 1901126-002 | TUBE |
| | | | 1 | | 188 | 1901126-001 | TUBE |
| | | | 1 | | 187 | 1901125 | TUBE |
| | | | 1 | | 186 | 1901183-003 | TUBE |
| | | | 1 | | 185 | 1901141 | TUBE |
| | | | 2 | | 184 | 1901183-002 | TUBE |
| | | | 4 | | 183 | 1901123 | TUBE |
| | | | 1 | | 182 | 1901122 | TUBE |
| | | | 1 | | 181 | 1901121 | TUBE |
| | | | 1 | | 180 | 1901120 | TUBE |
| | | | 1 | | 179 | 1901119 | TUBE |
| | | | 1 | | 178 | 1901118 | TUBE |
| | | | 1 | | 177 | 1901117 | TUBE |
| | | | 4 | | 176 | 1901116 | TUBE |
| | | | 4 | | 175 | 1901115 | TUBE |
| | | | 4 | | 174 | 1901114 | TUBE |
| | | | 4 | | 173 | 1901113 | TUBE |
| | | | | | 172 | | |
| | | | 8 | | 171 | 1901112 | TUBE |
| | | | 1 | | 170 | 1901111 | TUBE ASSY, PUMP, CKT 4 |
| | | | 1 | | 169 | 1901110 | TUBE ASSY, PUMP, CKT 3 |
| | | | 1 | | 168 | 1901109 | TUBE ASSY, PUMP, CKT 2 |
| | | | 1 | | 167 | 1901108 | TUBE ASSY, PUMP, CKT 1 |
| | | | 1 | | 166 | 1901107 | TUBE ASSY, BLEED STATION, CKT 4 |
| | | | 1 | | 165 | 1901106 | TUBE ASSY, BLEED STATION, CKT 3 |
| | | | 1 | | 164 | 1901105 | TUBE ASSY, BLEED STATION, CKT 2 |
| | | | 1 | | 163 | 1901104 | TUBE ASSY, BLEED STATION, CKT 1 |
| | | | 1 | | 162 | 1901174-002 | TUBE, STRAIGHT |
| | | | 2 | | 161 | 1901174-001 | TUBE STRAIGHT |
| | | | 1 | | 160 | 1901101 | TUBE ASSY, GAGE |
| | | | 1 | | 159 | 1901100 | TUBE ASSY, FLOW SWITCH CKT 4 |
| | | | 1 | | 158 | 1901099 | TUBE ASSY, FLOW SWITCH CKT 3 |
| | | | 1 | | 157 | 1901098 | TUBE ASSY, FLOW SWITCH CKT 2 |
| | | | 1 | | 156 | 1901097 | TUBE ASSY, FLOW SWITCH, CKT 1 |
| | | | 1 | | 155 | 1901096 | TUBE ASSY, FILTER, CKT 4 |
| | | | 1 | | 154 | 1901095 | TUBE ASSY, FILTER, CKT 3 |
| | | | 1 | | 153 | 1901094 | TUBE ASSY, FILTER, CKT 2 |
| | | | 1 | | 152 | 1901093 | TUBE ASSY, FILTER, CKT 1 |
| | | | 1 | | 151 | 1016349 | TRANSFORMER |
| | | | 1 | | 150 | MIL-S-8372, TYPE J3 | SIGNAL ASSY, EMER CREW WARNING |
| | | | 4 | | 149 | MS 35489-12 | GROMMET, RUBBER |
| | | | 4 | | 148 | MS 35338-82 | WASHER, LOCK, SPLIT, MED |
| | | | 16 | | 147 | MS 35333-71 | WASHER, LOCK, FLAT, INTERNAL TOOTH |
| | | | 4 | | 146 | MS 21318-14 | SCREW, DRIVE, ROUND HD, TYPE U |
| | | | 4 | | 145 | MS 20073-04-11 | BOLT, MACH, DRILLED HD |
| | | | 8 | | 144 | AN 924-4C | NUT, FLARE TUBE, BULKHEAD |
| | | | 8 | | 143 | AN 924-4B | NUT, FLARE TUBE, BULKHEAD |
| | | | 4 | | 142 | AN 960C516 | WASHER, FLAT |
| | | | 16 | | 141 | AN 960C716 | WASHER, FLAT |
| | | | 1 | | 140 | MS 3102R20-15P | CONNECTOR, RECEPTACLE, ELECTRIC |
| | | | 1 | | 139 | MS 3122E14-15P | CONNECTOR, RECEPTACLE, ELECTRIC |
| | | | 1 | | 138 | MS 91528-2K2D | KNOB, CONTROL |
| | | | 3 | | 137 | MS 25068-23 | SWITCH, TOGGLE |
| | | | 2 | | 136 | MS 35489-43 | GROMMET, RUBBER |
| | | | 8 | | 135 | MS 35489-37 | GROMMET, RUBBER |
| | | | 45 | | 134 | MS 35338-81 | WASHER, LOCK, SPLIT, MED |
| | | | 6 | | 133 | MS 35338-80 | WASHER, LOCK, SPLIT, MED |
| | | | 16 | | 132 | MS 35338-79 | WASHER, LOCK, SPLIT, MED |
| | | | 19 | | 131 | MS 35276-65 | SCR, MACH, DRILLED FILLISTER HD |
| | | | 8 | | 130 | MS 35276-64 | SCR, MACH, DRILLED FILLISTER HD |
| | | | 8 | | 129 | MS 35275-64 | SCR, MACH, DRILLED FILLISTER HD |
| | | | 3 | | 128 | MS 35275-46 | SCR, MACH, DRILLED FILLISTER HD |
| | | | 4 | | 127 | MS 35275-32 | SCR, MACH, DRILLED FILLISTER HD |
| | | | 16 | | 126 | MS 35275-26 | SCR, MACH, DRILLED FILLISTER HD |
| | | | 8 | | 125 | MS 35275-18 | SCR, MACH, DRILLED FILLISTER HD |
| | | | 4 | | 124 | MS 35275-16 | SCR, MACH, DRILLED FILLISTER HD |
| | | | 16 | | 123 | MS 35250-78 | SCR, MACH, FLAT HD, 82°, SLOTTED |
| | | | 19 | | 122 | MS 35250-74 | SCR, MACH, FLAT HD, 82°, SLOTTED |
| | | | 5 | | 121 | MS 35250-73 | SCR, MACH, FLAT HD, 82°, SLOTTED |
| | | | 2 | | 120 | MS 35249-53 | SCR, MACH, FLAT HD, 82°, SLOTTED |
| | | | 2 | | 119 | MS 35249-38 | SCR, MACH, FLAT HD, 82°, SLOTTED |
| | | | 14 | | 118 | MS 35217-57 | SCR, MACH, PAN HD, CROSS-RECESSED |
| | | | 4 | | 117 | MS 35216-28 | SCR, MACH, PAN HD, CROSS-RECESSED |
| | | | 1 | | 116 | MS 21919D66 | CLAMP, CUSHIONED |
| | | | 3 | | 115 | MS 21919D63 | CLAMP, CUSHIONED |
| | | | 13 | | 114 | MS 20822-6B | ELBOW, FLARE TUBE & PIPE, 90° |
| | | | 10 | | 113 | MS 20189-6B | SLEEVE, FLARE TUBE |
| | | | 2 | | 112 | MS 20819-5B | SLEEVE, FLARE TUBE |
| | | | 6 | | 111 | MS 20819-4B | SLEEVE, FLARE TUBE |
| | | | 8 | | 110 | MS 20074-03-06 | BOLT, MACH, DRILLED HD |
| | | | 4 | | 109 | MS 20074-03-05 | BOLT, MACH, DRILLED HD |
| | | | 4 | | 108 | MS 20074-03-04 | BOLT, MACH, DRILLED HD |
| | | | 4 | | 107 | MS 20074-05-07 | BOLT, MACH, DRILLED HD |
| | | | 2 | | 106 | MS 20073-04-05 | BOLT, MACH, DRILLED HD |
| | | | 16 | | 105 | MS 20073-03-05 | BOLT, MACH, DRILLED HD |
| | | | 10 | | 104 | MS 20073-03-04 | BOLT, MACH, DRILLED HD |
| | | | 1 | | 103 | AN 6290-12 | GASKET |
| | | | 10 | | 102 | AN 960C416 | WASHER, FLAT |
| | | | 93 | | 101 | AN 960C10 | WASHER, FLAT |
| | | | 8 | | 100 | AN 960C8 | WASHER, FLAT |
| | | | 28 | | 99 | AN 960C6 | WASHER, FLAT |
| | | | 12 | | 98 | AN 960C4 | WASHER, FLAT |
| | | | 1 | | 97 | AN 823-6B | ELBOW, FLARE TUBE & PIPE, 45° |
| | | | 6 | | 96 | AN 823-4B | ELBOW, FLARE TUBE & PIPE, 45° |
| | | | 10 | | 95 | AN 818-6B | NUT, COUPLING |
| | | | 2 | | 94 | AN 818-5B | NUT, COUPLING |
| | | | 6 | | 93 | AN 818-4B | NUT, COUPLING |
| | | | 2 | | 92 | AN 816-6B | NIPPLE, FLARE TUBE & PIPE |
| | | | 10 | | 91 | AN 816-6-2B | NIPPLE, FLARE TUBE & PIPE |
| | | | 2 | | 90 | AN 816-5-4B | NIPPLE, FLARE TUBE & PIPE |
| | | | 2 | | 89 | AN 816-5B | NIPPLE, FLARE TUBE & PIPE |
| | | | 1 | | 88 | AN 814-12C | PLUG & BLEEDER |
| | | | 1 | | 87 | 1901086-003 | STRIP, MARKER |
| | | | 1 | | 86 | 1901083 | CASE ASSY, ELECTRICAL EQUIP. |
| | | | 3 | | 85 | 1901082-022 | DIAL ASSY, TEMP CONTROL |
| | | | 1 | | 84 | 1901082-011 | DIAL ASSY, TEMP CONTROL |
| | | | 1 | | 83 | 1901081 | CONDENSING UNIT, HERMETIC |
| | | | 1 | | 82 | 1901079 | SOCKET, BULB, SENSING |
| | | | 1 | | 81 | 1901077-001 | METER, FLOW RATE INDICATOR, MODIFIED |
| | | | 1 | | 80 | 1901076 | VALVE, RESERVOIR |
| | | | 2 | | 79 | 1901074-002 | ELBOW, FLARE TO PIPE |
| | | | 2 | | 78 | 1901074-001 | ELBOW, FLARE TO PIPE |
| | | | 1 | | 77 | 1901071 | ELBOW ASSY, TANK |
| | | | 16 | | 76 | 1901069-002 | INSULATOR, MOTOR-PUMP |
| | | | 4 | | 75 | 1901069-001 | INSULATOR, MOTOR-PUMP |
| | | | 1 | | 74 | 1901068 | MANIFOLD ASSY, HEATER |
| | | | 3 | | 73 | 1901062 | MANIFOLD ASSY, HEATER |
| | | | 1 | | 72 | 1901061 | PLATE, QUICK DISCONNECT |
| | | | 4 | | 71 | 1901060-021 | MANIFOLD ASSY, TEMP. SENSING |
| | | | 4 | | 70 | 1901060-011 | MANIFOLD ASSY, TEMP. SENSING |
| | | | 1 | | 69 | 1901057 | BRACKET, HEAT INTERCHANGER |
| | | | 1 | | 68 | 1901056 | PLATE, MOUNTING, NAMEPLATE |
| | | | 1 | | 67 | 1901055 | BRACKET, TRANSFORMER |
| | | | 16 | | 66 | 1901054 | INSULATOR, REAR |
| | | | 8 | | 65 | 1901052-002 | INSULATOR, FRONT |
| | | | 8 | | 64 | 1901052-001 | INSULATOR, FRONT |
| | | | 1 | | 63 | 1901053 | PLATE, IDENTIFICATION |
| | | | 1 | | 62 | 1901179 | PLATE, IDENTIFICATION |
| | | | 2 | | 61 | 1901049 | CLAMP, CHILLER |
| | | | 1 | | 60 | 1901047 | BRACKET, OIL TANK |
| | | | 1 | | 59 | 1901046 | COVER, ELECTRICAL BOX |
| | | | 1 | | 58 | 1901045 | PANEL, REAR |
| | | | 16 | | 57 | 1901044 | CLAMP, FLOWMETER |
| | | | 1 | | 56 | 1901176 | HEAT INTERCHANGER ASSY, REFRIGERANT |
| | | | 3 | | 55 | 1016315-001 | NIPPLE, PIPE HEX. |
| | | | 1 | | 54 | 1901041 | BRACKET, SUPPORT, HOSE |
| | | | 1 | | 53 | 1901039 | BRACKET, TERMINAL STRIP |
| | | | 1 | | 52 | 1901037 | INSULATOR, FLOW SWITCH |
| | | | 1 | | 51 | 1901036 | INSULATOR, THERMOSTAT MANIFOLD |
| | | | 1 | | 50 | 1901031 | BRACKET, AUDIBLE ALARM |
| | | | 2 | | 49 | 1901027 | CLAMP, TUBE |
| | | | 2 | | 48 | 1901026 | CLAMP ASSY, CABLE |
| | | | 1 | | 47 | 1901025 | CLAMP ASSY, CABLE |
| | | | 1 | | 46 | 1901024 | PLATE, MOUNTING, INLET & OUTLET |
| | | | 1 | | 45 | 1901023 | BRACKET, ANGLE |
| | | | 2 | | 44 | 1901022 | SUPPORT, CHILLER |
| | | | 1 | | 43 | 1901021 | BRACKET, THERMOSTAT |
| | | | 1 | | 42 | 1901020 | PLATE, MOUNTING, CHILLER |
| | | | 1 | | 41 | 1901018 | BRACKET, BLEED VALVE |
| | | | 1 | | 40 | 1901017 | PANEL, ELECTRICAL CONNECTOR |
| | | | 1 | | 39 | 1901016 | BRACKET, FLOW SWITCH |
| | | | 4 | | 38 | 1901013 | MANIFOLD, THERMOSTATIC |
| | | | 1 | | 37 | 1901012 | FRAME, COOLANT, EQUIPMENT |
| | | | 1 | | 36 | 1901009 | PANEL, FRONT |
| | | | 1 | | 35 | 1901007 | CHART, CALIBRATION |
| | | | 1 | | 34 | 1901006 | TANK, RESERVOIR |
| | | | 4 | | 33 | 1901004 | FLOW SWITCH ASSY |
| | | | 1 | | 32 | 1901003-001 | METER, FLOW RATE INDICATOR, FLOAT TYPE |
| | | | 1 | | 31 | 1897151 | SWITCH, ROTARY SELECTOR |
| | | | 1 | | 30 | 1901001-021 | VALVE, TEMP. REGULATING |
| | | | 3 | | 29 | 1901001-011 | VALVE, TEMP. REGULATING |
| | | | 4 | | 28 | 1897150 | PUMP, ROTARY, POWER DRIVEN |
| | | | 1 | | 27 | 1900893 | PUMP, CENTRIFUGAL |
| | | | 1 | | 26 | 1900841 | EXCHANGER, HEAT |
| | | | 6 | | 25 | 1016272 | VALVE, BLEED |
| | | | 4 | | 24 | 1016271 | HEATER |
| | | | 1 | | 23 | 1016306-041 | FILTER |
| | | | 8 | | 22 | 1897162 | SWITCH, THERMOSTATIC |
| | | | 4 | | 21 | 1016238-002 | COUPLING HALF, QUICK DISCONNECT |
| | | | 1 | | 20 | 1016180-003 | VALVE-GLOBE, FEMALE TO FEMALE |
| | | | 8 | | 19 | 1016179 | HOSE ASSY, LOW PRESSURE |
| | | | 4 | | 18 | 1016178-005 | SWITCH, PRESS ACTUATED |
| | | | 1 | | 17 | 1016177 | SWITCH ASSY, PUSH BUTTON |
| | | | 4 | | 16 | 1016148-002 | VALVE, FLOW CONTROL |
| | | | 4 | | 15 | 1016148-001 | VALVE, FLOW CONTROL |
| | | | 1 | | 14 | 1016145-001 | VALVE, RELIEF |
| | | | 1 | | 13 | 1016144-001 | GAGE, LIQUID LEVEL |
| | | | 4 | | 12 | 1016143 | VALVE, CHECK |
| | | | 3 | | 11 | AN910-2 | COUPLING. |
| | | | 4 | | 10 | 1016141-001 | VALVE, CHECK |
| | | | 4 | | 9 | 1016136-003 | GAGE, PRESS. |
| | | | 9 | | 8 | 1016137-001 | GAGE, TEMP. |
| | | | 4 | | 7 | 1015869-356 | SWITCH ASSY, LIGHT INDICATOR |
| | | | 1 | | 6 | 1016136-002 | GAGE, PRESS. |
| | | | 4 | | 5 | 1016019-005 | COUPLING HALF-QUICK DISC, (FEMALE) |
| | | | 4 | | 4 | 1015869-538 | SWITCH ASSY, LIGHT INDICATOR |
| | | | 4 | | 3 | 1015869-355 | SWITCH ASSY, LIGHT INDICATOR |
| | | | 1 | | 2 | 1015869-163 | SWITCH ASSY, LIGHT INDICATOR |
| | | | 2 | | 1 | 1015869-162 | SWITCH ASSY, LIGHT INDICATOR |

LIST OF PARTS AND MATERIALS

SEE NOTE 2

| 1900395-011 | 1900395-011 | -011 |
|---|---|---|
| NEXT ASSY | USED ON | APPLICABLE DASH NO. |
| APPLICATION | | |

THE ASSEMBLY PART NUMBER IS THE DRAWING NUMBER AND THE DASH NUMBER THAT APPLIES

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS ± DECIMALS ± ANGLES ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

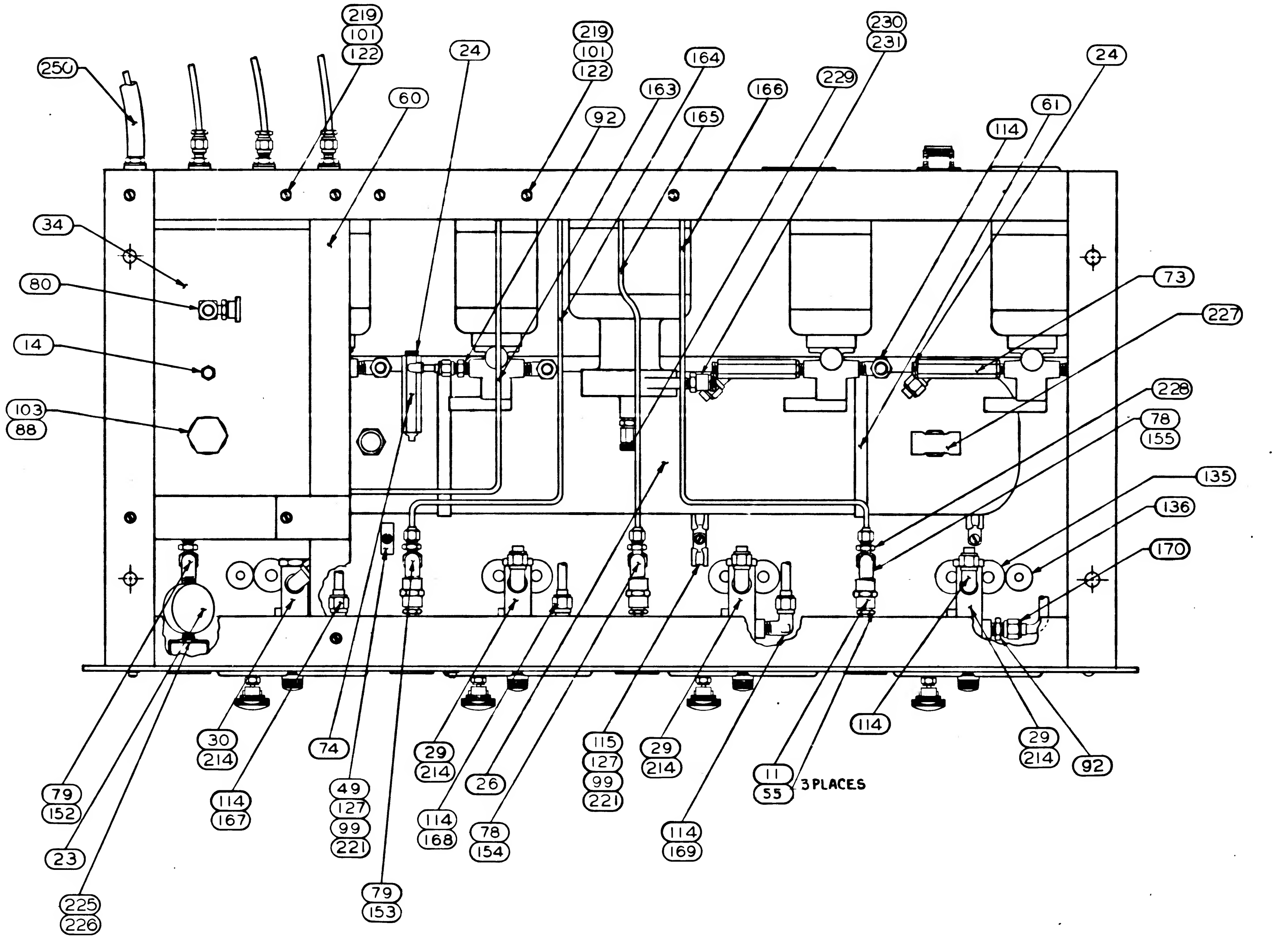
AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN G. DEMMONS DATE 4/6/63
CHECKED G.D.D. 6-19-63
APPROVAL M.R.G. 4-13-64
APPROVAL
NASA APPROVAL 1-6-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

COOLANT SUPPLY
INTERFACE CONTROL

CODE IDENT NO.
SIZE E
1900098
SCALE 1/2
SHEET 1 OF 7

| SYM | ZONE | REVISIONS TDRR C1944<br>DESCRIPTION | CHG NO | DATE | APPD |
|---|---|---|---|---|---|
| G |  | REPLACES REV. "B" WITH CHANGE PER TDRR 13850 | 27 OCT 64 | 21 AUG 64 | JWP |
| D1 | C-6 | REVISED PER CM 304982 PER TDRR 15774 | — | 1 DEC 64 |  |
| E | D3,4, 4,5 | REVISED PER TDRR 15786 |  | 1 FEB 65 | JWP |



VIEW IN DIRECTION C
(SEE SH 2)

Ⓒ THIS SHEET ADDED

| | |
|---|---|
| 1900995-011 | 1900995-011 |
| NEXT ASSY | USED ON |
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON
FRACTIONS DECIMALS ANGLES
± ± ±
DO NOT SCALE THIS DRAWING
MATERIAL
CONTRACT NAS 9-497

AC SPARK PLUG DIVISION, GMC
MILWAUKEE, WISCONSIN
ACSP PN
DRAWN G. DEMMONS DATE
CHECKED G.D.D. 5-15-64
APPROVAL MRG 4-13-64
APPROVAL
NASA APPROVAL 11-6-64
MIT APPROVAL

MANNED
SPACECRAFT CENTER
HOUSTON, TEXAS

COOLANT SUPPLY
INTERFACE CONTROL

CODE IDENT NO.
SIZE E
1900098
SCALE 1/2
SHEET 3 OF 7

Apollo G&N Specification
PS-1900098

Class B Release
TDRR 02581
14 AUG 63

# PROCUREMENT SPECIFICATION
# FOR
# COOLANT SUPPLY

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 01941 DATE 1 July 1963

Record of Revisions

| Revision Letter | TDRR No. | Pages Revised | Approvals | | Date |
|---|---|---|---|---|---|
| | | | MIT | NASA | |
| A | | 4-8, 11 and 12 retyped. Was 14 pages now 12 pages. MXC-187908 | | | 7-5-63 |
| B | | 4, 6, 7, 11 and 12, pages 7 and 8 retyped MXC- | | | 7-19-63 |
| | | 188337 | | | |
| C | 02581 | Pages 2, 4, 6, & 7 revised MXC- | WJK | W J [illegible] | 8/14/63 |
| | | Pages 2 and 7 retyped. 188985 | | | |
| D | 10583 | 2, 4, 7, 8, 9, 11, & 12/MXC- ok | | | |
| E | 10583 | 1 through 12; was 12 pages, now ok | | | |
| | | 17 pages/ ECO-193752 | | | |

(Continued)

This specification consists of page i to iii and 1 to 17 inclusive.

APOLLO G&N Specification
PS-1900098-F

Class B Release
TDRR 02581
14 Aug '63

# PROCUREMENT SPECIFICATION

# FOR

# COOLANT SUPPLY

**Record of Revisions**
(Continued)

Ⓜ

| Date | Revision Letter | TDRR No. | Pages Revised | Approvals | |
|---|---|---|---|---|---|
| | | | | MIT | NASA |
| 8-4-64 | F | 11385 | 3-9, 11-16. | WAK | |
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| | | | | | |

This specification consists of page i to iii and 1 to 17 inclusive.

Apollo G&N Specification
PS-1900098

Class B Release
TDRR 02581
14 AUG 63

# PROCUREMENT SPECIFICATION

FOR

COOLANT SUPPLY

FOR INFORMATION ONLY

CLASS B RELEASE TDR No. 01941 DATE 11 July 1963

Record of Revisions

| Revision Letter | TDRR No. | Pages Revised | Approvals | | Date |
|---|---|---|---|---|---|
| | | | MIT | NASA | |
| A | | 4-8, 11 and 12 retyped. Was 14 pages now 12 pages. MXC-187908 | | | 7-5-63 |
| B | | 4, 6, 7, 11 and 12, pages 7 and 8 retyped MXC- | | | 7-19-63 |
| | | 188337 | | | |
| C | 02581 | Pages 2, 4, 6, & 7 revised MXC- | WLK | | 8/14/63 |
| | | Pages 2 and 7 retyped. 188985 | | | |
| D | 10583 | 2, 4, 7, 8, 9, 11, & 12/MXC- | | | |
| E | 10583 | 1 through 12; was 12 pages, now | | | |
| | | 17 pages/ECO-193752 | | | |

(Continued)

This specification consists of page i
to iii and 1 to 17 inclusive.

APOLLO G&N Specification
PS-1900098-B

# PROCUREMENT SPECIFICATION
# FOR
# COOLANT SUPPLY

## 1. SCOPE

1.1 PURPOSE. This specification establishes the requirements for the procurement of the Coolant Supply.

## 2. APPLICABLE DOCUMENTS

2.1 EFFECTIVE ISSUES. The following documents of the issue in effect on the date of invitation for bids form a part of this specification to the extent specified herein.

### SPECIFICATIONS

**Military**

| | |
|---|---|
| MIL-P-116 | Preservation, Methods of |
| MIL-E-9500 | Ethylene Glycol, Technical Uninhibited (Reference Only) |
| MIL-E-17555 | Electronic and Electrical Equipment and Associated Repair Parts, Preparation for Delivery of |
| MIL-W-27076 | Workmanship Standards for Ground Electronic and Associated Equipment |

**APOLLO G&N**

| | |
|---|---|
| ND-1002018 | General Specification for APOLLO Ground Support Equipment |
| ND-1002019 | Marking |
| ND-1002023 | Procedure for Serialization of Components, Assemblies, etc., for APOLLO Guidance and Navigation Equipment |
| ND-1015404 | General Specification, Configuration, Process and Quality Control Requirements for Suppliers of High Reliability Articles for Use in Spacecraft and Supporting Equipment |

## DRAWINGS

### APOLLO G&N

| | |
|---|---|
| 1016019 | Coupling Half-Quick Disconnect (Female Half)<br>(Specification Control Drawing) |
| 1016238 | Coupling Half-Quick Disconnect (Male Half)<br>(Specification Control Drawing) |
| 1900098 | Coolant Supply |

4 Aug 64 (Rev F)

3.2.3.1.2 Compatibility. Metals and materials used in fabricating the coolant supply shall be compatible with the coolant used. Metals used shall be corrosion resistant and shall be suitably protected against corrosion by plating, painting, or other surface treatment.

3.2.3.1.2.1 Coolant Composition. The coolant will consist of the following:

a. 62.5 parts by weight of glycol (Reference Specification MIL-E-9500)
b. 37.422 parts by weight of distilled water
c. 1.563 parts by weight of inhibitor No. 1 Triethanolaminephosphate (TEAP)
d. 0.156 parts by weight of inhibitor No. 2 Sodium Mercaptobenzothiozol (Na MCBT)

3.2.3.2 Construction. The construction of the coolant supply shall be in accordance with Drawing 1900098 and all applicable drawings and specifications listed thereon.

3.2.3.3 Parts. The inlet and outlet fluid couplings shall be in accordance with Drawings 1016019 and 1016238 and as follows:

a. Outlet couplings from the coolant supply shall be of the female type.
b. Inlet couplings to the coolant supply shall be of the male type.

3.2.4 Weight, Dimensions, Finish, and Marking

3.2.4.1 Weight. The maximum gross weight of the coolant supply including the coolant, less hoses and coolant connector plate, shall not exceed 430 lbs.

3.2.4.2 Dimensions. Dimensions of the coolant supply shall be in accordance with Drawing 1900098.

3.2.4.3 Finish. Exterior metal surfaces shall be treated and finished in accordance with the requirements of Specification ND-1002018, and as indicated on the applicable drawings.

3.2.4.4 Marking. Marking of assemblies, subassemblies, and components shall be in accordance with Specification ND-1002019

3.2.4.4.1 Operating Instructions. Each coolant supply shall have one set of operating instructions printed on durable paper or laminated in plastic. The instructions shall contain a step by step procedure for operating the coolant supply and shall include necessary safety precautions. The instructions shall also include flow diagrams, circuit schematics and a chart for each different circuit plotting millimeters versus temperature as a function of flow rate (lb/hr).

3.2.5 Serial Numbers. Each coolant supply shall be identified by a serial number assigned in accordance with Specification ND-1002023.

3.2.6 Workmanship. The fabrication and workmanship of the coolant supply, its assemblies, subassemblies, and parts shall be in accordance with Specification MIL-W-27076.

4 Aug 64 (Rev F)

3.2.7 Interchangeability. Unless otherwise specified, the coolant supply and its component parts shall be physically and functionally interchangeable without selection or fitting.

3.2.8 General Specification. Unless otherwise specified, the requirements of Specification ND-1002018 apply as requirements of this specification.

### 3.2.9 Electro-Mechanical

3.2.9.1 Operating Power. All motors; pumps, and other equipment associated with the coolant supply shall operate from 115±10 vac, line-to-neutral, 60±5 cps, 3-phase, 4-wire, Y connected.

3.2.9.2 Temperature Control System. The coolant supply shall have provisions for cooling and heating the coolant before the coolant is pumped through the guidance and navigation equipment and coldplates during each phase of testing. The temperature control system shall control the coolant temperature to within 2°F of the desired temperature within the range of each circuit.

3.2.9.3 Pumping System. The coolant supply shall have pumping systems to circulate the coolant at the desired flow rates and pressures through the guidance and navigation equipment and cold plates.

3.2.9.3.1 Flow Rate. The pumping system shall control the flow rates to within 5 percent, including the inaccuracies of the flowmeter, at any point within the range of each circuit.

3.2.9.3.2 Pressure. The pumping system shall supply coolant at a pressure sufficient to overcome a maximum pressure drop of 20 psi throughout the flow range, and have a maximum pumping pressure of 60 psig for circuits 1 and 2 and 80 psig for circuits 3 and 4.

3.2.9.4 Distribution System. The coolant supply shall have four circuits. Each of the four circuits shall have an inlet and an outlet and shall have provisions for controlling and monitoring the temperature and the flow rate of the coolant. The coolant supply shall supply fluid at the following temperatures and flow rates. Sufficient control shall be provided to permit the temperature and flow rate to be set at any point within the ranges specified.

3.2.9.4.1 Circuit 1. When measured at the outlet of the coolant supply, the temperature and flow rate of the coolant shall be as follows:

| | | |
|---|---|---|
| a. | Temperature | 20° to 65°F |
| b. | Flow Rate | 25 to 100 lb/hr |

3.2.9.4.2 Circuit 2. When measured at the outlet of the coolant supply, the temperature and flow rate of the coolant shall be as follows:

| | | |
|---|---|---|
| a. | Temperature | 40° to 100°F |
| b. | Flow Rate | 8 to 50 lb/hr |

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3.2.9.4.3 Circuit 3. When measured at the outlet of the coolant supply, the temperature and flow rate of the coolant shall be as follows:

a. Temperature 40° to 100°F
b. Flow Rate 25 to 180 lb/hr

3.2.9.4.4 Circuit 4. When measured at the outlet of the coolant supply, the temperature and flow rate of the coolant shall be as follows:

a. Temperature 40° to 100°F
b. Flow Rate 25 to 180 lb/hr

3.2.9.5 Exhaust. The temperature control system design shall allow the refrigeration unit to dissipate its heat into the room ambient as shown on Drawing 1900098.

3.2.9.6 Condensation. The temperature control system shall be designed to minimize condensation. Provisions shall be provided to collect and dispose of the condensation that does form.

3.2.9.7 Filtering. Circuit 1 (IMU/Optics) of the coolant supply shall have a filter included in the pump outlet line. The filter shall have a 10-micron nominal filtration capacity and a 20 square inch minimum effective filter area.

3.2.9.8 Tank. The coolant supply shall have a storage tank of 2-gallon capacity designed for nominal operating pressure of 40 psig, and a burst pressure in excess of 90 psig. A relief valve shall prevent pressures in excess of 60 psig.

3.2.9.9 Indicators. The supplier shall use only those indicators approved by the purchaser. The coolant supply shall have the following indicators:

a. A lamp to indicate when the main power is applied to the refrigeration unit and circulating pump.

b. A lamp to indicate when the power is applied to the coolant pumps.

c. Four inlet temperature gauges with a minimum range of 20° to 120°F graduated in increments of 2°F or less and with an accuracy of 1 percent over this range.

d. Four outlet temperature gauges with a minimum range of 20° to 120°F graduated in increments of 2°F or less and with an accuracy of 1 percent over this range.

e. An outlet pressure gauge on the pump with a 0 to 100 psi range.

f. A flow meter for each circuit. Meters shall be capable of readings in the following ranges utilizing 95 percent or less of the total meter display and shall be graduated in millimeters (see 3.2.4.4.1):

## 4. QUALITY ASSURANCE PROVISIONS

4.1 GENERAL. Unless otherwise specified herein, the supplier is responsible for the performance of all inspection requirements prior to submission for NASA inspection and acceptance. Except as otherwise specified, the supplier may utilize his own facilities or any commercial laboratory acceptable to NASA. Inspection records of the examinations and tests shall be kept complete and available to NASA as specified in the contract or order. The supplier shall conform to Class 3 of Specification ND-1015404.

4.1.1 Acceptance Tests. These tests shall be accomplished on each coolant supply being submitted for acceptance under the contract. Acceptance test data on each unit accepted must accompany shipment to the purchaser. Acceptance tests shall be witnessed by the cognizant government inspector, a representative of the purchaser, or as the purchaser may direct in the procurement order. These tests are detailed in 4.2. Failure of the coolant supply to comply with these requirements shall result in rejection of the item or lot of items.

4.1.2 Qualification and Requalification Tests. Qualification tests shall be accomplished at a NASA designated activity. These tests, as outlined in 4.3, shall be conducted after the award of the contract to determine that the product will meet all specified requirements.

Failure of the coolant supply to comply with these requirements shall result in the rejection of the lot or the cessation of production, as determined by the purchaser.

4.1.3 Test Conditions

4.1.3.1 Atmospheric. Unless otherwise specified herein, the coolant supply shall be tested under the following ambient conditions:

| | | |
|---|---|---|
| a. | Temperature | 25° ±10°C |
| b. | Relative Humidity | Not more than 90% |
| c. | Barometric Pressure | 28 to 32 inches of Hg |

4.1.3.2 Test Setup. Unless otherwise specified, each circuit shall be set up in accordance with Figure 1 when performing the tests specified herein.

4.1.3.3 Warmup. Prior to performing tests specified in 4.2.2 through 4.2.5, the coolant supply shall be energized and sufficient time shall be allowed for the unit to reach thermal stabilization.

## 4.2 ACCEPTANCE TESTS

4.2.1 Visual and Mechanical Inspection. A comprehensive inspection shall be made of the coolant supply to determine the extent of compliance with the requirements of this specification and Drawing 1900098, and shall at least include determination of the following:

a. Size, dimension, tolerance, weight, appearance, and markings.

b. Adequacy of materials, parts, and subassemblies; compliance with specific ratings and conformance to applicable specifications.

c. Finish, coatings, construction, markings, and nameplates, as applicable.

d. Wiring, cabling, welding, soldering, color coding, and terminals, as applicable.

e. Workmanship and cleanup.

4.2.2 Flow Control. The flow control test shall be performed as follows:

a. Connect the coolant supply for each circuit to the test setup as shown in Figure 1.

b. With 115±10V, 3ø, 60±3 cps applied (øA to J1-B, øB to J1-C, øC to J1-D, and 4th wire ground to J1-E) and the MAIN POWER switch and the COOLANT PUMP power switches set to the "ON" positions, the coolant supply shall stabilize within 30 minutes.

c. Adjust the FLOW CONT FINE and COARSE in each circuit to a minimum FLOW indicator reading of 80 mm.

d. Apply power to the simulated load specified in Table I.

e. Adjust valve $V_1$ (Figure 1) for a minimum pressure drop of 20 psi in each circuit as measured between the pressure gage $P_2$ (Figure 1) and the SUPPLY PRESS gage (front panel) at a maximum flow rate condition only. Valve $V_1$ requires no further adjusting hereafter.

f. Adjust the TEMP CONT in each circuit to obtain the temperature values specified in Table I.

g. After the temperature stabilizes, adjust the FLOW CONT FINE and COARSE in each circuit to obtain the flow values specified in Table I.

h. With the conditions established for each circuit as specified in Table I, the TEMP CONT control and the FLOW CONT FINE and COARSE controls adjusted to obtain the values specified in Table I, the temperature and flow rate shall be as specified in Table I for the time duration specified.

TABLE I

FLOW RATE

| CIRCUIT | FLOW RATE CONDITION | TEMP (deg ±5 deg F) | FLOW RATE (lb/hr ±5%) | TEST DURATION (min) | SIMULATED LOAD (min) |
|---|---|---|---|---|---|
| 1 | Maximum | 45.0 | 100.0 | 5 minutes | 125 watts |
| 1 | Minimum | 45.0 | 25.0 | ↑ | 125 watts |
| 2 | Maximum | 70.0 | 50.0 | │ | 43 watts |
| 2 | Minimum | 70.0 | 8.0 | │ | 43 watts |
| 3 | Maximum | 64.0 | 180.0 | │ | 402 watts |
| 3 | Minimum | 64.0 | 25.0 | │ | 402 watts |
| 4 | Maximum | 70.0 | 180.0 | ↓ | 120 watts |
| 4 | Minimum | 70.0 | 25.0 | 5 minutes | 120 watts |

4.2.3 Temperature Control. With conditions specified in 4.2.2.a through g established, HEATER ON switches in the "on" position for circuits 2, 3, and 4, (during conditions 3 and 4 of Table II only), the temperature control test shall be performed as follows:

a. Adjust the FLOW CONT FINE and COARSE controls for each condition and circuit specified in Table II.

b. Adjust the TEMP CONT control to obtain the outlet temperature specified in Table II.

c. Adjust the variac (Figure 1) to vary the external load from 0 to 100 percent of maximum load for each circuit as specified in Table II. The outlet temperature shall be automatically maintained within ±2°F of the set point.

## TABLE II

## TEMPERATURE CONTROL

| CIRCUIT | CONDITION | OUTLET TEMPERATURE (deg ±2 deg F) | FLOW RATE (lb/hr ±5%) | SIMULATED LOAD (watts ±5%) | TEST DURATION |
|---|---|---|---|---|---|
| 1 | 1 | 20 | 33.0 | 125 | Stabilization |
| 1 | 2 | 20 | 33.0 | 0 | ↕ |
| 1 | 3 | 65 | 33.0 | 125 | |
| 1 | 4 | 65 | 33.0 | 0 | |
| 2 | 1 | 40 | 14.0 | 43 | |
| 2 | 2 | 40 | 14.0 | 0 | |
| 2 | 3 | 100 | 14.0 | 43 | |
| 2 | 4 | 100 | 14.0 | 0 | |
| 3 | 1 | 40 | 120.0 | 402 | |
| 3 | 2 | 40 | 120.0 | 0 | |
| 3 | 3 | 100 | 120.0 | 402 | |
| 3 | 4 | 100 | 120.0 | 0 | |
| 4 | 1 | 40 | 52.0 | 120 | |
| 4 | 2 | 40 | 52.0 | 0 | |
| 4 | 3 | 100 | 52.0 | 120 | |
| 4 | 4 | 100 | 52.0 | 0 | Stabilization |

4.2.4 Warning and Alarm Circuit. With conditions specified in 4.2.2.b established and the ALARM switch set to the "LOCAL" position, the warning and alarm circuit test shall be performed as follows:

a. With the HIGH PRESSURE-LOW FLOW alternate action switch of circuit 1 depressed, the warning lamp shall flash and the alarm shall ring.

b. With the momentary ALARM INHIBIT switch depressed, the alarm shall stop ringing.

c. Repeat 4.2.4.a and b for circuits 2, 3, and 4.

d. With the HIGH TEMPERATURE-LOW TEMPERATURE alternate action switch of circuit 1 depressed, the warning lamp shall flash and the alarm shall ring.

e. Repeat 4.2.4.b.

f. Repeat 4.2.4.d and e for circuits 2, 3, and 4.

4.2.5 Sensing Switches. With the conditions specified in 4.2.2.a through d established and the appropriate sensing switches adjusted to the respective values specified in Table III, verify that each sensing switch operates within the allowable limits specified in Table III. Repeat this test three times to confirm the ability of the switches to repeat.

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## TABLE III

## SETTINGS OF SENSING SWITCHES

| CIRCUIT | HIGH PRESSURE (±2.0 psig) | LOW FLOW (lb/hr) | HIGH TEMPERATURE (°F) | LOW TEMPERATURE (°F) |
|---|---|---|---|---|
| 1 | 60.0 | 24.0±4.0 at 45° ±5°F | 52.0±2.0 | 38.0±2.0 |
| 2 | 60.0 | 9.0±3.0 at 70° ±6°F | 84.0±4.0 | 56.0±4.0 |
| 3 | 80.0 | 70.0±10.0 at 64° ±5°F | 80.0±4.0 | 48.0±4.0 |
| 4 | 80.0 | 37.0±4.0 at 70° ±5°F | 84.0±4.0 | 56.0±4.0 |

4.3 QUALIFICATION AND REQUALIFICATION TESTS. Qualification and requalification tests shall consist of the tests of 4.2 and the environmental tests of 4.3.1.

### 4.3.1 Environmental Tests

4.3.1.1 High Temperature. With the conditions specified in 4.2.2.a through d established, the coolant supply placed in a suitable environmental chamber, and the controls set as specified in Table IV, subject the coolant supply to the conditions specified in Table IV to verify that it has sufficient cooling capacity to control the outlet temperature of each circuit at the lowest temperature of the required range. All circuits shall be operating simultaneously during this test.

## TABLE IV

## HIGH TEMPERATURE

| CIRCUIT | CONTROL SETTINGS | | CONDITIONS | | | |
|---|---|---|---|---|---|---|
| | OUTLET TEMP (deg ±2 deg F) | FLOW RATE (lb/hr ±5%) | POWER DISSIPATION (watts min) | AMBIENT TEMP (deg ±2 Deg F) | AMBIENT PRESSURE (inches Hg) | TEST DURATION (hr) |
| 1 | 20 | 33 | 125 | 100 | 28 to 32 | 1 |
| 2 | 40 | 14 | 43 | 100 | 28 to 32 | 1 |
| 3 | 40 | 120 | 402 | 100 | 28 to 32 | 1 |
| 4 | 40 | 52 | 120 | 100 | 28 to 32 | 1 |

4.3.1.2 Sensing Switches. With the conditions specified in 4.2.2.a through d established and the ALARM switch set to the "LOCAL" position, the sensing switches test shall be performed as follows:

a. With the needle valve $V_1$ (Figure 1) adjusted for a pressure increase from 62 to 70 psig for circuits 1 and 2, the HIGH PRESSURE lamp shall flash at a rate of 3 to 5 flashes per second and the alarm shall ring in circuits 1 and 2 throughout the range.

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b. With the needle valve $V_1$ (Figure 1) adjusted for a pressure increase from 82 to 90 psig for circuits 3 and 4, the HIGH PRESSURE lamp shall flash at a rate of 3 to 5 flashes per second and the alarm shall ring in circuits 3 and 4 throughout the range.

c. With the needle valve $V_1$ adjusted for a decrease in flow rate from 20 to 13 lb/hr for circuit 1, the LOW FLOW lamp shall flash and the alarm shall ring in circuit 1 throughout the range.

d. With the needle valve $V_1$ adjusted for a decrease in flow rate from 6 to 0 lb/hr for circuit 2, the LOW FLOW lamp shall flash and the alarm shall ring in circuit 2 throughout the range.

e. With the needle valve $V_1$ adjusted for a decrease in flow rate from 60 to 13 lb/hr for circuit 3, the LOW FLOW lamp shall flash and the alarm shall ring in circuit 3 throughout the range.

f. With the needle valve $V_1$ adjusted for a decrease in flow rate from 33 to 13 lb/hr for circuit 4, the LOW FLOW lamp shall flash and the alarm shall ring in circuit 4 throughout the range.

4.3.1.3 Shock Test. The coolant supply shall be subjected to two, 4-inch pivot drops and two, 1-inch free fall drops upon its usual base. Upon completion of this test, visually inspect the unit for damage and repeat 4.3.1.1, except, in Table IV reduce the temperature to room ambient and test duration to 15 minutes.

## 5. PREPARATION FOR DELIVERY

5.1 PRESERVATION AND PACKAGING. The coolant supply shall be preserved and packaged in accordance with Level B of Specification MIL-E-17555.

5.1.1 Level B (Limited Military Packaging). Level B packaging is that which will afford adequate protection against damage during multiple domestic shipments, handling, and covered storage.

5.1.1.1 Cleaning. Cleaning for Level B preservation and packaging shall be in accordance with Method C-1 of Specification MIL-P-116.

5.1.1.2 Unit Protection. The coolant supply shall be individually afforded unit protection in accordance with Method III of Specification MIL-P-116. In addition, equipment packaged for Level B protection shall be sealed against water and dust by means of suitable wrapping.

5.2 REPAIR PARTS. Repair parts shall have preservation and packaging per the applicable repair parts list and its packaging supplement.

5.3 PACKING. The coolant supply shall be packed for shipment in accordance with 5.1.

5.4 MARKING. In addition to any special marking required by the contract or order, the marking of the unit, interior packages, and exterior shipping containers shall be in accordance with Level B of Specification MIL-E-17555.

## 6. NOTES

6.1 HEATING AND COOLING. The coolant supply will provide coolant at the temperatures and flow rates for system and subsystem testing as shown in Tables V, VI, and VII.

TABLE V

SYSTEM TEST

| CIRCUIT | SET POINT (Nominal) | | RANGE | | LOAD DISSIPATION (watts) |
|---|---|---|---|---|---|
| | Temperature (°F) | Flow Rate (lb/hr) | Temperature (°F) | Flow Rate (lb/hr) | |
| 1 | 45 | 33 | 20-65 | 25-100 | 125 max |
| 2 | 70 | 14 | 40-100 | 8-50 | 43 max |
| 3 | 64 | 120 | 40-100 | 25-180 | 402 max |
| 4 | 70 | 52 | 40-100 | 25-180 | 120 max |

TABLE VI

SUBSYSTEM TEST NO. 1

| CIRCUIT | SET POINT (Nominal) | | RANGE | | LOAD DISSIPATION (watts) |
|---|---|---|---|---|---|
| | Temperature (°F) | Flow Rate (lb/hr) | Temperature (°F) | Flow Rate (lb/hr) | |
| 1 | 45 | 33 | 20-65 | 25-100 | 80 max |
| 2 | 70 | 14 | 40-100 | 8-50 | 43 max |
| 3 | 64 | 120 | 40-100 | 25-180 | 402 max |

TABLE VII

SUBSYSTEM TEST NO. 2

| CIRCUIT | SET POINT (Nominal) | | RANGE | | LOAD DISSIPATION (watts) |
|---|---|---|---|---|---|
| | Temperature (°F) | Flow Rate (lb/hr) | Temperature (°F) | Flow Rate (lb/hr) | |
| 1 | 51 | 33 | 20-65 | 25-100 | 45 max |
| 2 | 70 | 14 | 40-100 | 8-50 | 43 max |
| 3 | 64 | 120 | 40-100 | 25-180 | 402 max |

**APOLLO G&N Specification**
PS-1900098-G

**Class** B **Release**
**TDRR** 02581
14 Aug '63

# PROCUREMENT SPECIFICATION

# FOR

# COOLANT SUPPLY

**Record of Revisions**
(Continued)

| Date | Revision Letter | TDRR No. | Pages Revised | Approvals | |
|---|---|---|---|---|---|
| | | | | MIT | NASA |
| Ⓜ 8-4-64 | F | 11385 | 3-9, 11-16. | WAK | |
| 11/4/64 | G | 13902 | 9, 14, 15 & 16 | WK | WJR |
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**This specification consists of page i to iii and 1 to 17 inclusive.**

## 4. QUALITY ASSURANCE PROVISIONS

4.1 GENERAL. Unless otherwise specified herein, the supplier is responsible for the performance of all inspection requirements prior to submission for NASA inspection and acceptance. Except as otherwise specified, the supplier may utilize his own facilities or any commercial laboratory acceptable to NASA. Inspection records of the examinations and tests shall be kept complete and available to NASA as specified in the contract or order. The supplier shall conform to Class 3 of Specification ND-1015404.

4.1.1 Acceptance Tests. These tests shall be accomplished on each coolant supply being submitted for acceptance under the contract. Acceptance test data on each unit accepted must accompany shipment to the purchaser. Acceptance tests shall be witnessed by the cognizant government inspector, a representative of the purchaser, or as the purchaser may direct in the procurement order. These tests are detailed in 4.2. Failure of the coolant supply to comply with these requirements shall result in rejection of the item or lot of items.

4.1.2 Qualification and Requalification Tests. Qualification tests shall be accomplished at a NASA designated activity. These tests, as outlined in 4.3, shall be conducted after the award of the contract to determine that the product will meet all specified requirements.

Failure of the coolant supply to comply with these requirements shall result in the rejection of the lot or the cessation of production, as determined by the purchaser.

4.1.3 Test Conditions

4.1.3.1 Atmospheric. Unless otherwise specified herein, the coolant supply shall be tested under the following ambient conditions:

| | | |
|---|---|---|
| a. | Temperature | 25° ±10°C |
| b. | Relative Humidity | Not more than 90% |
| c. | Barometric Pressure | 28 to 32 inches of Hg |

4.1.3.2 Test Setup. Unless otherwise specified, each circuit shall be set up in accordance with Figure 1 when performing the tests specified herein.

4.1.3.3 Warmup. Prior to performing tests specified in 4.2.2 through 4.2.6, the coolant supply shall be energized and sufficient time shall be allowed for the unit to reach thermal stabilization.

## TABLE III

## SETTINGS OF SENSING SWITCHES

| CIRCUIT | HIGH PRESSURE (±2.0 psig) | LOW FLOW (lb/hr) | HIGH TEMPERATURE (° F) | LOW TEMPERATURE (° F) |
|---|---|---|---|---|
| 1 | 60.0 | 24.0±4.0 at 45° ±5° F | 52.0±2.0 | 38.0±2.0 |
| 2 | 60.0 | 9.0±3.0 at 70° ±5° F | 84.0±4.0 | 56.0±4.0 |
| 3 | 80.0 | 70.0±10.0 at 64° ±5° F | 80.0±4.0 | 48.0±4.0 |
| 4 | 80.0 | 37.0±4.0 at 70° ±5° F | 84.0±4.0 | 56.0±4.0 |

4.2.6 Signal Connector Circuit. With the switch positions and coolant operations specified in Table IV, the resistance between the pins shall be as specified in Table IV.

## TABLE IV

## SIGNAL CONNECTOR CIRCUIT

| LOCAL/REMOTE ALARM SW POSITION | COOLANT CIRCUIT OPERATION | PINS | | RESISTANCE (Ohms) |
|---|---|---|---|---|
| | | From | To | |
| "LOCAL" | No malfunctions | J2-N | J2-C | <1.0 |
| | | J2-N | J2-M | >200K |
| | | J2-M | J2-C | >200K |
| | One or more malfunctions in any or all circuits | J2-N | J2-M | <1.0 |
| | | J2-N | J2-C | <1.0 |
| | | J2-M | J2-C | <1.0 |
| "REMOTE" | No malfunctions | J2-N | J2-C | <1.0 |
| | | J2-N | J2-M | >200K |
| | | J2-C | J2-M | >200K |
| | One or more malfunctions in any or all circuits. | J2-N | J2-M | <1.0 |
| | | J2-N | J2-C | >200K |
| | | J2-M | J2-C | >200K |

4.3 QUALIFICATION AND REQUALIFICATION TESTS. - Qualification and requalification tests shall consist of the tests of 4.2 and the environmental tests of 4.3.1.

### 4.3.1 Environmental Tests

4.3.1.1 High Temperature. With the conditions specified in 4.2.2.a through d established, the coolant supply placed in a suitable environmental chamber, and the controls set as specified in Table V, subject the coolant supply to the conditions specified in Table V to verify that it has sufficient cooling capacity to control the outlet temperature of each circuit at the lowest temperature of the required range. All circuits shall be operating simultaneously during this test.

TABLE V

HIGH TEMPERATURE

| CIRCUIT | CONTROL SETTINGS |  | CONDITIONS |  |  |  |
|---|---|---|---|---|---|---|
|  | OUTLET TEMP (deg ±2 deg F) | FLOW RATE (lb/hr ±5%) | POWER DISSIPATION (watts min) | AMBIENT TEMP (deg ±2 deg F) | AMBIENT PRESSURE (inches Hg) | TEST DURATION (hr) |
| 1 | 20 | 33 | 125 | 100 | 28 to 32 | 1 |
| 2 | 40 | 14 | 43 | 100 | 28 to 32 | 1 |
| 3 | 40 | 120 | 402 | 100 | 28 to 32 | 1 |
| 4 | 40 | 52 | 120 | 100 | 28 to 32 | 1 |

4.3.1.2 Sensing Switches. With the conditions specified in 4.2.2.a through d established and the ALARM switch set to the "LOCAL" position, the sensing switches test shall be performed as follows:

a. With the needle valve $V_1$ (Figure 1) adjusted for a pressure increase from 62 to 70 psig for circuits 1 and 2, the HIGH PRESSURE lamp shall flash at a rate of 3 to 5 flashes per second and the alarm shall ring in circuits 1 and 2 throughout the range.

b. With the needle valve $V_1$ (Figure 1) adjusted for a pressure increase from 82 to 90 psig for circuits 3 and 4, the HIGH PRESSURE lamp shall flash at a rate of 3 to 5 flashes per second and the alarm shall ring in circuits 3 and 4 throughout the range.

c. With the needle valve $V_1$ adjusted for a decrease in flow rate from 20 to 13 lb/hr for circuit 1, the LOW FLOW lamp shall flash and the alarm shall ring in circuit 1 throughout the range.

d. With the needle valve $V_1$ adjusted for a decrease in flow rate from 6 to 0 lb/hr for circuit 2, the LOW FLOW lamp shall flash and the alarm shall ring in circuit 2 throughout the range.

e. With the needle valve $V_1$ adjusted for a decrease in flow rate from 60 to 13 lb/hr for circuit 3, the LOW FLOW lamp shall flash and the alarm shall ring in circuit 3 throughout the range.

f. With the needle valve $V_1$ adjusted for a decrease in flow rate from 33 to 13 lb/hr for circuit 4, the LOW FLOW lamp shall flash and the alarm shall ring in circuit 4 throughout the range.

4.3.1.3 Shock Test. The coolant supply shall be subjected to two, 4-inch pivot drops and two, 1-inch free fall drops upon its usual base. Upon completion of this test, visually inspect the unit for damage and repeat 4.3.1.1, except, in Table V reduce the temperature to room ambient and test duration to 15 minutes.

## 5. PREPARATION FOR DELIVERY

5.1 PRESERVATION AND PACKAGING. The coolant supply shall be preserved and packaged in accordance with Level B of Specification MIL-E-17555.

5.1.1 Level B (Limited Military Packaging). Level B packaging is that which will afford adequate protection against damage during multiple domestic shipments, handling, and covered storage.

5.1.1.1 Cleaning. Cleaning for Level B preservation and packaging shall be in accordance with Method C-1 of Specification MIL-P-116.

5.1.1.2 Unit Protection. The coolant supply shall be individually afforded unit protection in accordance with Method III of Specification MIL-P-116. In addition, equipment packaged for Level B protection shall be sealed against water and dust by means of suitable wrapping.

5.2 REPAIR PARTS. Repair parts shall have preservation and packaging per the applicable repair parts list and its packaging supplement.

5.3 PACKING. The coolant supply shall be packed for shipment in accordance with 5.1.

5.4 MARKING. In addition to any special marking required by the contract or order, the marking of the unit, interior packages, and exterior shipping containers shall be in accordance with Level B of Specification MIL-E-17555.

## 6. NOTES

6.1 HEATING AND COOLING. The coolant supply will provide coolant at the temperatures and flow rates for system and subsystem testing as shown in Tables VI, VII, and VIII.

TABLE VI

SYSTEM TEST

| CIRCUIT | SET POINT (Nominal) |  | RANGE |  | LOAD DISSIPATION (watts) |
|---|---|---|---|---|---|
|  | Temperature (°F) | Flow Rate (lb/hr) | Temperature (°F) | Flow Rate (lb/hr) |  |
| 1 | 45 | 33 | 20-65 | 25-100 | 125 max |
| 2 | 70 | 14 | 40-100 | 8-50 | 43 max |
| 3 | 64 | 120 | 40-100 | 25-180 | 402 max |
| 4 | 70 | 52 | 40-100 | 25-180 | 120 max |

TABLE VII

SUBSYSTEM TEST NO. 1

| CIRCUIT | SET POINT (Nominal) |  | RANGE |  | LOAD DISSIPATION (watts) |
|---|---|---|---|---|---|
|  | Temperature (°F) | Flow Rate (lb/hr) | Temperature (°F) | Flow Rate (lb/hr) |  |
| 1 | 45 | 33 | 20-65 | 25-100 | 80 max |
| 2 | 70 | 14 | 40-100 | 8-50 | 43 max |
| 3 | 64 | 120 | 40-100 | 25-180 | 402 max |

TABLE VIII

SUBSYSTEM TEST NO. 2

| CIRCUIT | SET POINT (Nominal) |  | RANGE |  | LOAD DISSIPATION (watts) |
|---|---|---|---|---|---|
|  | Temperature (°F) | Flow Rate (lb/hr) | Temperature (°F) | Flow Rate (lb/hr) |  |
| 1 | 51 | 33 | 20-65 | 25-100 | 45 max |
| 2 | 70 | 14 | 40-100 | 8-50 | 43 max |
| 3 | 64 | 120 | 40-100 | 25-180 | 402 max |

APOLLO G&N Specification
PS-1900098-H

Class A Release
TDRR 15773
26 Jan '65

# PROCUREMENT SPECIFICATION

# FOR

# COOLANT SUPPLY

## Record of Revisions
(Continued)

| Date | Revision Letter | TDRR No. | Pages Revised | Approvals | |
|---|---|---|---|---|---|
| | | | | MIT | NASA |
| Ⓜ 8-4-64 | F | 11385 | 3-9, 11-16. | WAK | |
| Ⓜ 11/4/64 | G | 13902 | 9, 14, 15 & 16 | WK | WJR |
| 1/26/65 | H | 15773 | 6 | WK | ACM |
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This specification consists of page i to iii and 1 to 17 inclusive.

Apollo G&N Specification
PS-1900098 H

Class A Release
TDRR 15773
26 Jan '65

# PROCUREMENT SPECIFICATION

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# COOLANT SUPPLY

Record of Revisions

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|---|---|---|---|---|---|
| | | | MIT | NASA | |
| A | | 4-8, 11 and 12 retyped. Was 14 pages now 12 pages. MXC-187928 | | | 7-5-63 |
| B | | 4, 6, 7, 11 and 12, pages 7 and 8 retyped MXC- | | | [illegible]-17-63 |
| | | 188337 | | | |
| C | 02581 | Pages 2, 4, 6, & 7 revised MXC- | WAK | | 8/14/63 |
| | | Pages 2 and 7 retyped. 188985 | | | |
| D | 10583 | 2, 4, 7, 8, 9, 11, & 12/MXC- | | | |
| E | 10583 | 1 through 12; was 12 pages, now | | | |
| | | 17 pages/ECO-193752 | | | |

(Continued)

This specification consists of page i to iii and 1 to 17 inclusive.

3.2.9.4.3 Circuit 3. When measured at the outlet of the coolant supply, the temperature and flow rate of the coolant shall be as follows:

a. Temperature 40° to 100°F
b. Flow Rate 25 to 180 lb/hr

3.2.9.4.4 Circuit 4. When measured at the outlet of the coolant supply, the temperature and flow rate of the coolant shall be as follows:

a. Temperature 40° to 100°F
b. Flow Rate 25 to 180 lb/hr

3.2.9.5 Exhaust. The temperature control system design shall allow the refrigeration unit to dissipate its heat into the room ambient as shown on Drawing 1900098.

3.2.9.6 Condensation. The temperature control system shall be designed to minimize condensation. Provisions shall be provided to collect and dispose of the condensation that does form.

3.2.9.7 Filtering. Circuit 1 (IMU/Optics) of the coolant supply shall have a filter included in the pump outlet line. The filter shall have a 40-micron nominal filtration capacity and a 20 square inch minimum effective filter area.

3.2.9.8 Tank. The coolant supply shall have a storage tank of 2-gallon capacity designed for nominal operating pressure of 40 psig, and a burst pressure in excess of 90 psig. A relief valve shall prevent pressures in excess of 60 psig.

3.2.9.9 Indicators. The supplier shall use only those indicators approved by the purchaser. The coolant supply shall have the following indicators:

a. A lamp to indicate when the main power is applied to the refrigeration unit and circulating pump.

b. A lamp to indicate when the power is applied to the coolant pumps.

c. Four inlet temperature gauges with a minimum range of 20° to 120°F graduated in increments of 2°F or less and with an accuracy of 1 percent over this range.

d. Four outlet temperature gauges with a minimum range of 20° to 120°F graduated in increments of 2°F or less and with an accuracy of 1 percent over this range.

e. An outlet pressure gauge on the pump with a 0 to 100 psi range.

f. A flow meter for each circuit. Meters shall be capable of readings in the following ranges utilizing 95 percent or less of the total meter display and shall be graduated in millimeters (see 3.2.4.4.1):